OCTOBER 26, 1959

PAPER TRADE JOURNAL

Updating Your Truck Fleet—Rebuild or Replace?

Spotlight on Dry Deinking Process at TAPPI Conference

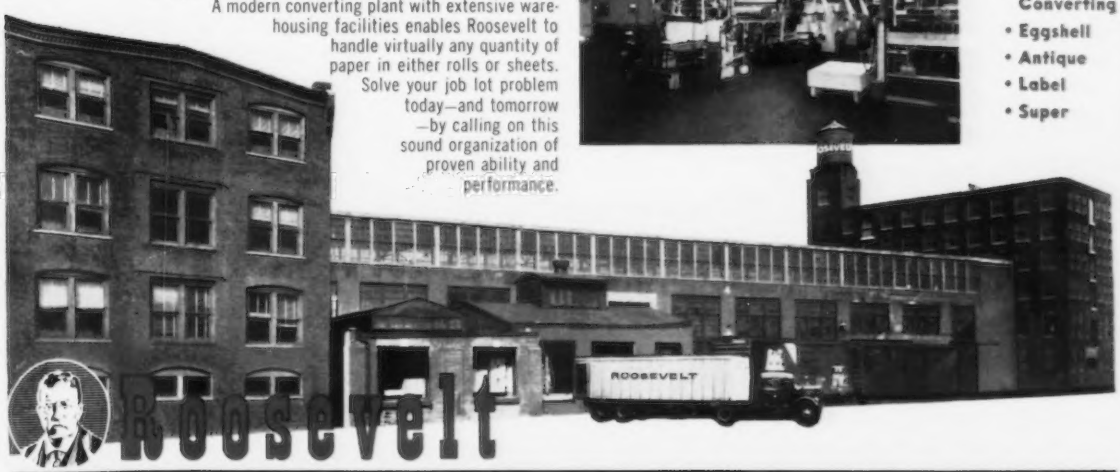
New Shear Cut Slitting System Pioneered at Tyrone Mill

O-I Opens New Corrugating Box Plant in Chicago

1 PROGRESSIVE ORGANIZATION FOR MARKETING ALL JOB LOTS!

- Offset
- Bond
- Enamel
- Machine Coated
- Writing
- English Finish
- Mimeo
- Index
- Bristol
- Tag
- Sulphite Converting
- Bleached Sulphate
- Envelope
- Kraft Converting
- Eggshell
- Antique
- Label
- Super

To paper mills looking for a dependable and continuous outlet for sub-standard and side-run tonnage, Roosevelt offers a strong sales organization geared to move all grades of paper to well-developed domestic and export markets. A modern converting plant with extensive warehousing facilities enables Roosevelt to handle virtually any quantity of paper in either rolls or sheets. Solve your job lot problem today—and tomorrow—by calling on this sound organization of proven ability and performance.



Roosevelt PAPER COMPANY

ARAMINGO AND CUMBERLAND • PHILADELPHIA 25, PA.

Editorial Dept.
University Microfilms, Inc.
313 N. First St.
Ann Arbor, Mich.

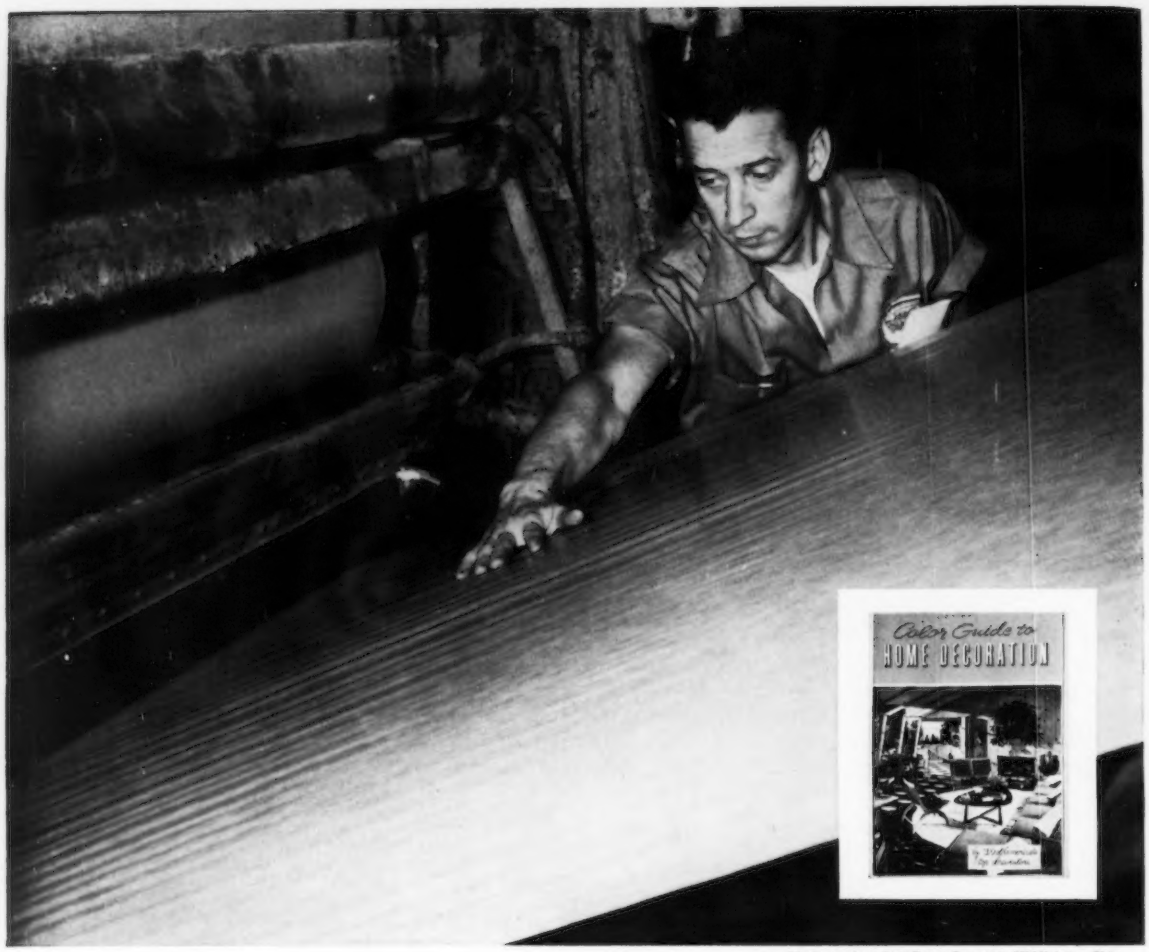


Photo courtesy Sorg Paper Company, Middletown, Ohio

Easy solution to "tough paper" problems

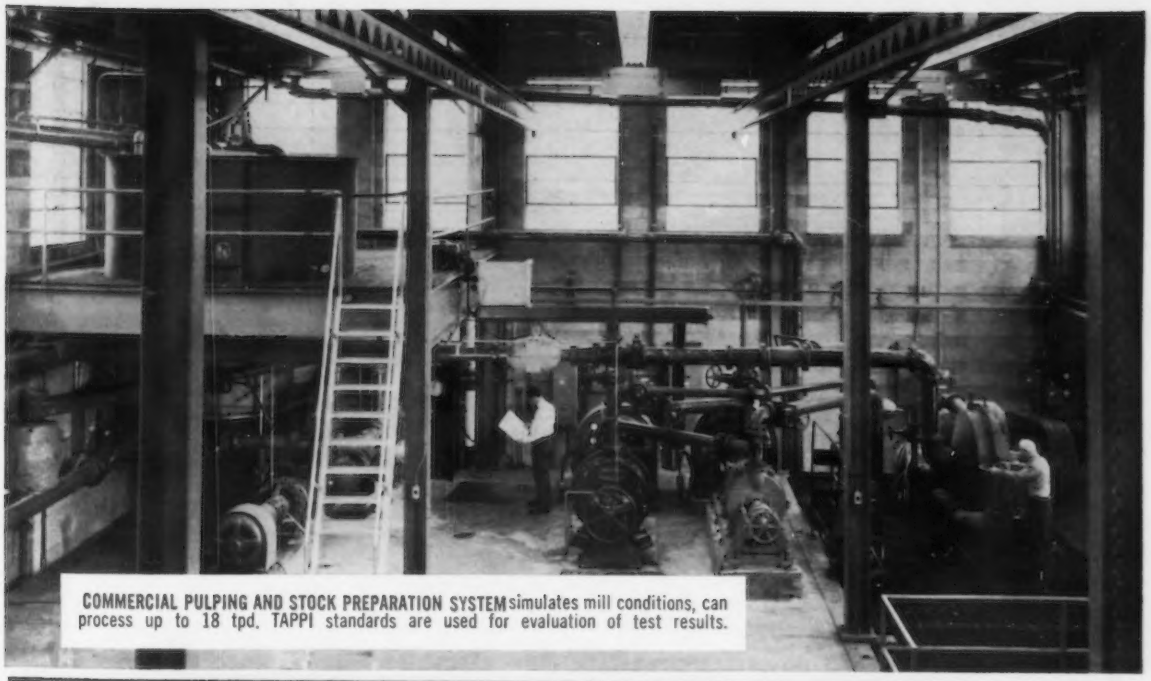
Plasticized printing papers represent a recently awakened field of opportunity for fine paper producers. Interest is running high in these tough, durable sheets for book covers, tags, labels, maps, charts, signs, banners, calendars, menus, games, bumper strips and other applications where rough usage, weather or repeated handling and folding are involved.

High strength and unusual flexibility plus resistance to moisture, soiling, fading, aging, tearing, cracking and fraying are the properties these versatile papers have in common. These mutual advantages spring from the general use of a latex-based impregnant, but can be varied by the individual manufacturer. And here's where you can pick up a prime pointer in the form of CHEMIGUM LATEX.

CHEMIGUM LATEX is used by a leading manufacturer to obtain maximum physical properties plus outstanding heat and light stability. Another major advantage lies in its excellent mechanical stability. But why not get all the pointers on CHEMIGUM LATEX by writing for the latest *Tech Book Bulletins*. Address: Goodyear, Chemical Division, Dept. J-9427 Akron 16, Ohio.

GOODYEAR
CHEMICAL DIVISION

Chemigum—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio



COMMERCIAL PULPING AND STOCK PREPARATION SYSTEM simulates mill conditions, can process up to 18 tpd. TAPPI standards are used for evaluation of test results.

PULP and PAPER RESEARCH CENTRE Serves the Papermaker Three Ways:

- *Basic Industry Research*
- *Independent Contract Research*
- *Field Technical-Sales Services*

The Pulp and Paper Research Centre is Bolton's newest service to the Papermaker. As a contribution to the industry, the Centre conducts basic research and analysis in fibre treatment and stock preparation systems as well as machine and process design.

Another important function of the Centre is to engage in independent contract research and development projects for papermakers.

Field technical-sales services in applications of pulping and fibre treating are now available. These include analytical, microscopic, evaluative, and design and start-up of complete stock preparation systems, including controls and instrumentation.

Facilities of the Centre include three laboratories, a pilot plant, and a commercial scale pulping and stock preparation system.

If the efficiency of your fibre treatment or stock preparation system can be improved it may pay you to use contract research or field technical-sales service. WRITE PULP AND PAPER RESEARCH CENTRE, JOHN W. BOLTON & SONS, LAWRENCE, MASS.

BOLTON EMERSON
TRADE MARK

PILOT PLANT. Commercial operations are simulated for flexible experimentation and testing of small scale stock runs, new equipment and processes.

PULP TESTING AND WET LABORATORY. Tests strengths of various vegetable fibres, drying strengths of papers, etc., using latest equipment. Humidity and air control test room (not shown) is used for physical tests.

Texaco Paper Machine Oil HD gives full-time protection against the major causes of bearing failure

Water, heat and contaminants do more to shorten bearing life, provoke unexpected production stoppages, than any other factors. With Texaco Paper Machine Oil HD in the circulating system, you get positive, dependable protection against all three of these hazards.

Here's why. Texaco Paper Machine Oil HD is a premium grade lubricant fortified with detergent and dispersive agents, rust preventives and oxidation inhibitors. It provides a tough lubricating film that's proof against extreme pressures and temperatures. The rust protection helps to keep bearings bright-clean, whether the machine's running or idle. The inhibitors keep heat and moisture from building up sludge. And the detergent and dispersive agents keep carbonaceous material entrained in the oil instead of letting it settle out where it can clog oil passages.

For more information about Texaco Paper Machine Oil HD, just call the nearest of the more than 2,300 Texaco Distributing Plants, or write:

Texaco Inc., 135 East 42nd Street, New York 17, N. Y.

Tune In: Texaco Huntley-Brinkley Report, Mon.-Fri.-NBC-TV

TEXACO

Throughout the United States
Canada • Latin America • West Africa

LUBRICATION IS A MAJOR FACTOR IN COST CONTROL
(PARTS, INVENTORY, PRODUCTION, DOWNTIME, MAINTENANCE)

PAPER TRADE JOURNAL

PUBLISHED WEEKLY SINCE 1872

JOHN C. W. EVANS
Editor

PAUL D. VAN DERVEER
Associate Editor

R. E. THUEMMES
Associate Editor

HARRY L. DYER
Assistant Editor

K. E. PATTERSON
Assistant Editor

L. HAMEL
Production Editor

W. N. PERRY
Staff Artist

LOCKWOOD TRADE JOURNAL CO., INC.
49 West 45th Street, New York 36,
Plaza 7-2370

GEORGE E. LOCKWOOD.....President and Treasurer
ARTHUR E. GORDON.....Vice President
FREDERICK E. WINKLER.....Secretary

Published by Lockwood Trade Journal Co., Inc., at 34 North Crystal St., East Stroudsburg, Pa. Second class postage paid at East Stroudsburg, Pa. Printed in U.S.A. Copyright 1959 by Lockwood Trade Journal Co., Inc. Paper established Feb. 17, 1899, combined with Paper Trade Journal Nov. 16, 1899. Paper established Sept. 21, 1910, combined with Paper Trade Journal February 19, 1926. All rights to the above titles reserved. Also publishers of Lockwood's Annual Directory of the Paper and Allied Trades.

Week of OCTOBER 26, 1959—Vol. 143, No. 43

TRENDS 13

NEWS OF THE WEEK 15

FEATURE ARTICLES

Owens-Illinois Opens New Corrugating Box Plant 24

Novel Slitting System Makes Its Bow at West Virginia Mill 26

New Dry Process Intrigues Deinkers 28

How to Decide When to Rebuild and When to Replace an Industrial Truck 35

PAPER PEOPLE 18

NEW LITERATURE 42

NEWS OF CONVERTERS 44

PRICES OF FIBERS 54

NEW EQUIPMENT AND SUPPLIES 58

NEWS OF SUPPLIERS .. 64

FIGURES OF THE WEEK 68

CLASSIFIED ADVERTISING 73

ADVERTISERS INDEX .. 78

REMEMBER THESE DATES

November 4-6. Alkaline Pulping Conference, Hotel Robert Meyer, Jacksonville, Fla.

November 9-11. National Paperboard Ass'n., Annual Meeting, Waldorf-Astoria Hotel, New York, N. Y.

December 1-2. National Council for Stream Improvement, Inc., Pulp and Paper Industrial Waste Conference, Edgewater Beach Hotel, Chicago, Ill.

SUBSCRIPTIONS →

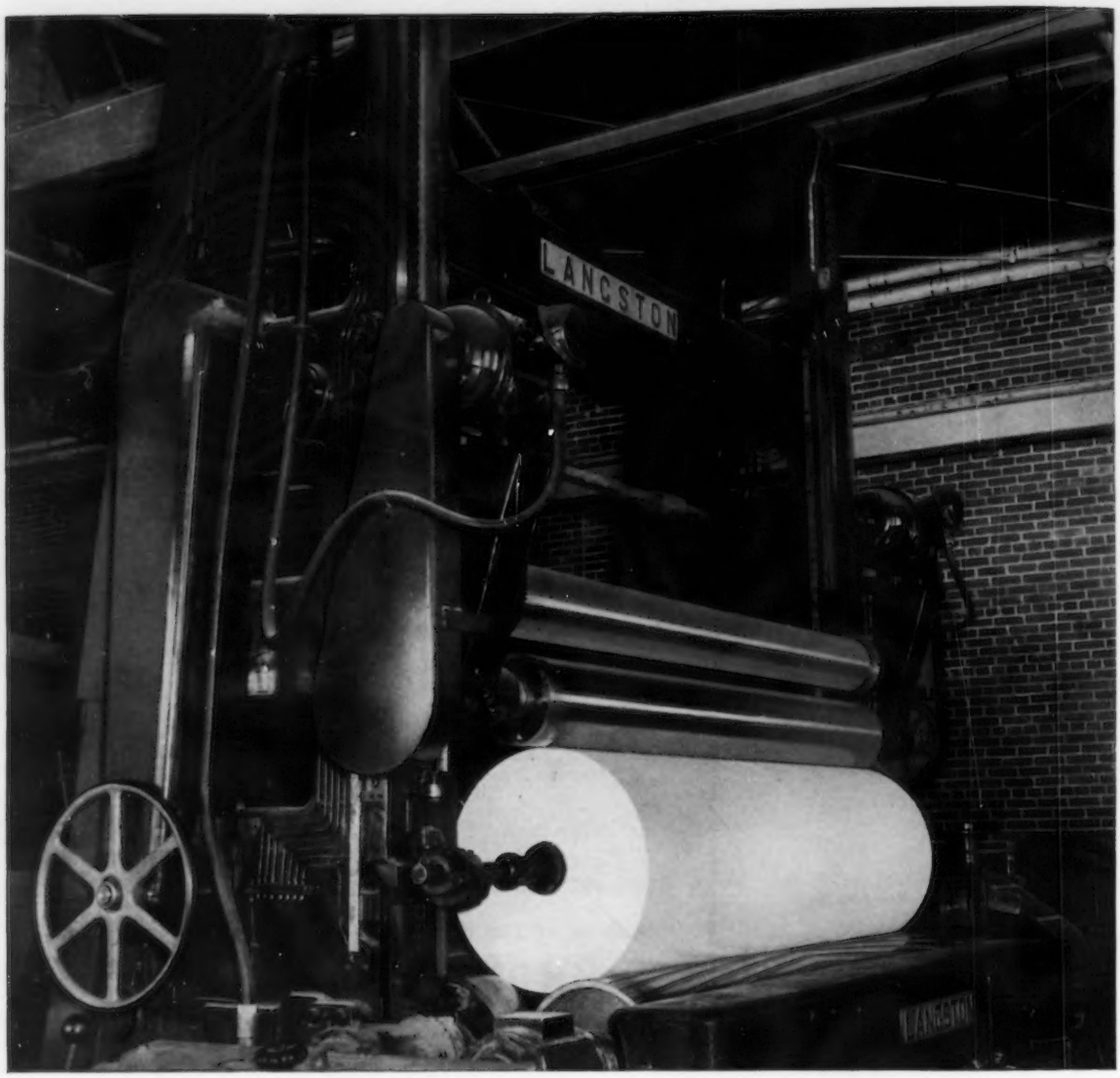
Paper & Pulp Mills, Converters and their Personnel	1 yr.	2 yrs.	3 yrs.
United States and Canada ...	$5.00	$8.00	$10.00
Latin American Countries	15.00	25.00	30.00
All Other Countries	20.00	30.00	40.00

All companies or individuals not engaged in the manufacture of paper and pulp, or in the converting thereof; U.S.A. and Canadian price per year: $7.50

Single copy price of current issues:
North America 50c Foreign $1.00

R. E. BOETSCH Director of Circulation

PAPER TRADE JOURNAL—49 W. 45th St., N.Y. 36, N.Y.
Please enter a subscription with the mailing address as follows:
Name .....
Address .....
City..... Zone.... State.....
If subscription is for an individual, please fill in:
Employer..... City..... State....
Position..... Employer's Business.....
Amount $ ..... ☐ Bill Me ☐ Bill Company ☐ Check Attached



Langston Slitter and Winder features precision roll density control

Here's a way for you to get uniform roll density from the core to the outside. This type "DH" Slitter and Winder features hydraulic rider roll control that automatically adds or subtracts rider roll weight.

This arrangement makes it possible to constantly maintain correct nip pressure to compensate for the changing diameter and weight of the rewound roll. A simple valve permits setting the correct rider roll weight for various grades and basis weights of both paper and board.

Pushbuttons for raising and lowering the rider roll during threadup replace complicated chains, sprockets, and bulky counterweights, thus speeding up production by reducing setup time.

Learn more. Write SAMUEL M. LANGSTON CO., 6th & Jefferson Sts., Camden 4, N.J.

SHEAR CUT CLEAN CUT

LANGSTON Leadership...by design

Modern

Slimes in Paper and Paperboard Manufacture

PLAYING TWENTY QUESTIONS with the problem of whether slime is animal, vegetable or mineral points up to the fact that in paper mill practice, the word "slime" is no longer restricted to microbiological growths.

To mill men, slimes are any of the slimy deposits which may appear, ranging in content from hydrated fines and true microbiological slimes through hydrated aluminum oxide gels and entrained pitch, iron, silica and calcareous substances.

Identification Critical

Obviously, any appearance of slime in a mill system calls for *positive identification* of its substance, and *action* to bring it under control.

In appearance, it is usually difficult to detect any real difference between slime caused by bacteriological growth and that produced by masses of wet, hydrated stock and inorganic gels. Laboratory analysis is necessary to provide the detailed information required for an expert to recommend the type of control program to be followed.

Variety of Analyses Needed

Nalco Field Service Men have the training and experience needed to deal quickly and effectively with paper mill slimes. They carry test equipment to analyze your system . . . not only for microbiological activity, but also for the many organic and inorganic elements that are part of most deposits. Supplementing their on-the-spot service is the Nalco Paper Process Laboratory, a service and research center equipped for the most exacting analysis work and for comprehensive research on every phase of pulp and paper mill slime control.

Prevention vs. Remedy

Keeping slimes from forming in mill systems with a preventive program has proved by far the most economical way to operate. Waiting for the appearance of slime before applying remedial treatment invites expensive time and quality losses, as well as higher treating costs.

Microbiological section of the Nalco Laboratories.

Nalco's Year 'Round Service

Seasonal variations in slime-forming conditions make effective slime control programs anything but static in nature. Your Nalco Representative is the man to put on the job to secure positive, low-cost slime *prevention*...all year long.

Call him—or write today for Nalco Bulletin P1.
Nalco Chemical Company, 6216 West 66th Place, Chicago 38, Illinois. Branches and affiliates in Canada, Germany, Italy and Spain.

Nalco CHEMICALS

AN ERASCO BUILT PAPER MILL

Modern cleaning systems for modern paper making

Oakite "on-the-fly" felt cleaning boosts paper board production two tons a week

Felt cleaning at one paper board mill proceeded routinely. Twice a week, the line was shut down, felt removed and washed in a cleaning solution. A new, simpler plan was suggested. It consisted of installing a permanent shower system. Perforated pipes were run across the felt—one close to the point where board leaves the felt, a second close to the point where felt picks up the wet stock.

Now, when cleaning is needed, a hot solution of Oakite 85 showers onto the felt, loosens sticky soil, and is rinsed off under the second shower—and all while the felt is working. The new system cuts out two shut-downs a week, for a production increase of two tons of board.

Ask your Oakite man to tell you about modern cleaning systems that can help you reduce downtime, increase production, save money. Or, write for Bulletin F-4647 which tells more. Oakite Products, Inc., 68 Rector Street, New York 6, N. Y.

OAKITE

50 1909-1959 SCIENCE *years' leadership in industrial cleaning*

Modern Cleaning Systems Keep Downtime DOWN

Export Division Cable Address: Oakite Technical Service Representatives in Principal Cities of U. S. and Canada

AN EBASCO-BUILT PAPER MILL
IS DESIGNED TO

GROW WITH YOUR MARKET

Provision for future expansion was a major requirement for Container Corporation's new bleach kraft mill to be located at Brewton, Alabama. Ebasco was asked to engineer, design and handle the construction of this mill so that it would meet the present and future demands for food board.

The plant, now in operation, is capable of producing over 300 tons of high-quality, bleached, solid sulfate board a day, utilizing the most efficient methods of materials handling and advanced automation techniques. Ebasco engineered the plant so that all key departments can be readily duplicated and new facilities added as growth requires.

If you are planning a new mill, or wish to increase the capacity of your present facilities, call on Ebasco. Ebasco's experience in the pulp and paper industry, and reputation for uncompromising quality, can be your assurance that your new plant will be designed to meet your present needs and planned to take care of your future requirements.

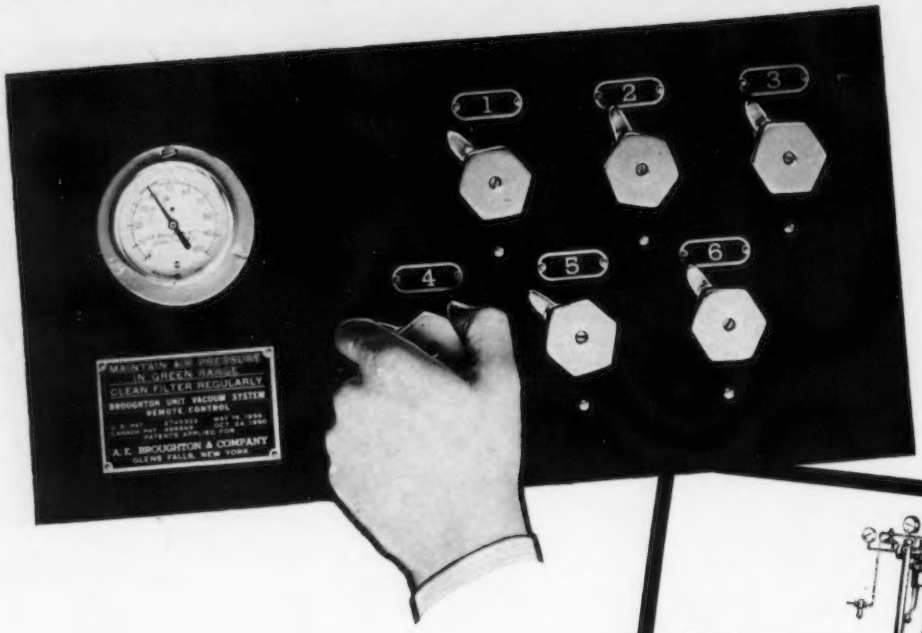
For more information on how Ebasco can serve you, write for your copy of our booklet, "Engineering, Design and Construction for Industry." Ebasco Services Incorporated, Dept. O, Two Rector St., New York 6, N. Y.

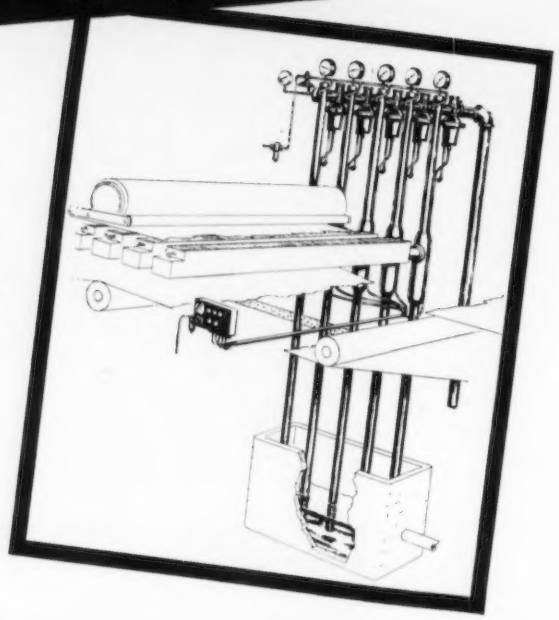
ENGINEERS · CONSTRUCTORS
EBASCO
BUSINESS CONSULTANTS

Consulting Engineering • Design & Construction • Facilities Planning • Financial & Business Studies • Industrial Relations • Insurance, Pensions & Safety • Purchasing, Inspection & Expediting • Rates & Pricing • Research • Sales, Marketing & Public Relations • Systems, Methods & Budgets • Tax • Valuation & Appraisal • Washington Office

NEW YORK • CHICAGO
DALLAS • PORTLAND, ORE.
SAN FRANCISCO • WASHINGTON, D. C.

Lick These Six Problems with One Hand!





One Hand on the Remote Control of the Broughton Unit Vacuum System will eliminate, or, at the least, greatly reduce these problems . . . .

1. Loss of loading and fine fibre
2. Loss of color
3. Two-sidedness
4. Wire-marking
5. Varying water mark
6. Fingering under the dandy

This is achieved by accurate, positive control of individual flat-box vacuums, maintaining a graduated application of vacuum in increasing or decreasing stages on the boxes.

When you consider also, the savings effected by the probable elimination of the flat-box vacuum pump, you must agree —

HERE IS A VACUUM SYSTEM WORTHY OF YOUR IMMEDIATE AND THOROUGH ATTENTION!

Write, or phone collect, for complete information.

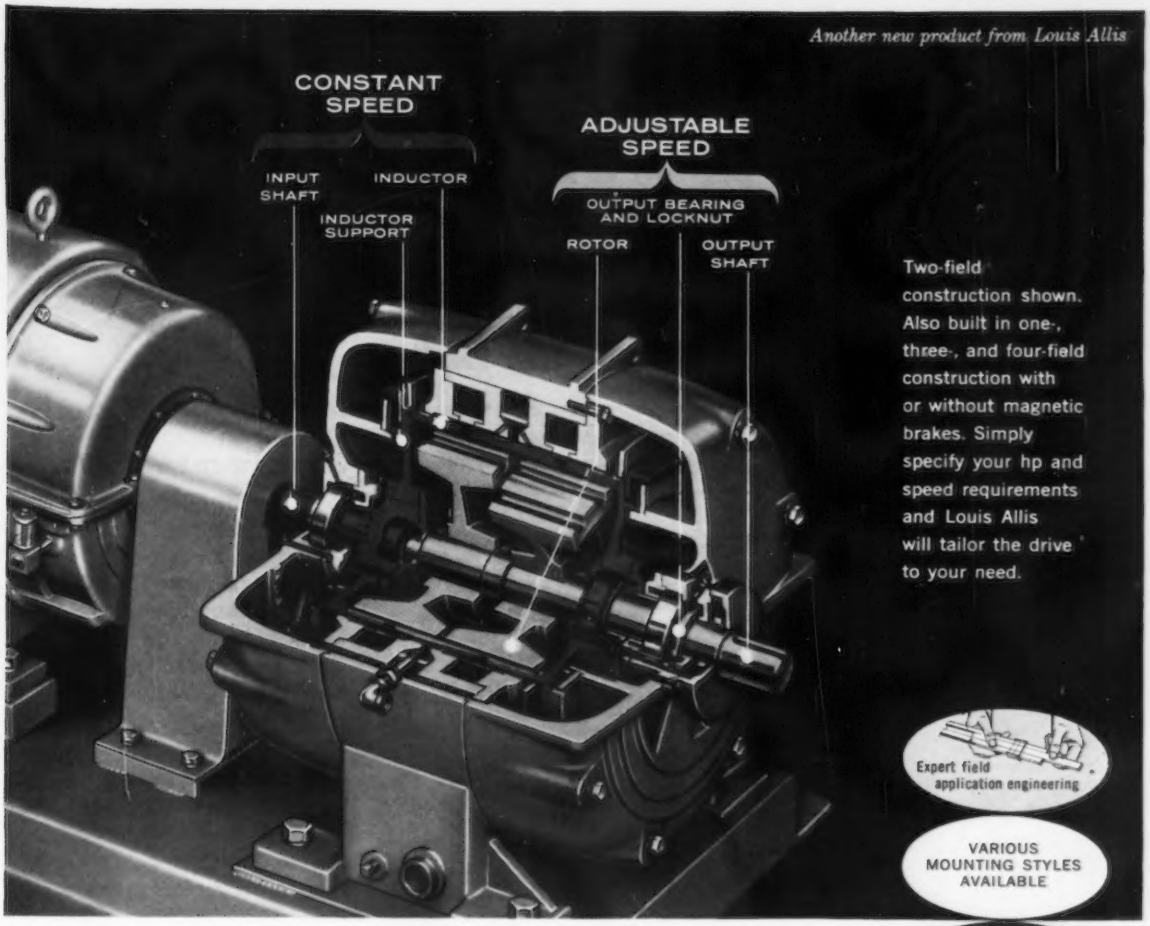
BROUGHTON — SYSTEMS FOR PAPER MACHINES

A.E. BROUGHTON & COMPANY, INC.

GLENS FALLS, NEW YORK CABLE ADDRESS: BROUGHTCO TEL. 2-6541

PRESKOTE

Another new product from Louis Allis



Two-field construction shown. Also built in one-, three-, and four-field construction with or without magnetic brakes. Simply specify your hp and speed requirements and Louis Allis will tailor the drive to your need.

Expert field application engineering

VARIOUS MOUNTING STYLES AVAILABLE

The new Louis Allis MAGNETIC DRIVE

A compact, adjustable speed drive up to 2000 hp!

Based on a liquid-cooled magnetic coupling design, the *all-new* Louis Allis Magnetic Drive offers you the finest in precise regulation, compactness, and design flexibility for adjustable speed drives up to 2000 hp.

A unique annular cooling manifold provides effective heat transfer. It eliminates "water-drag" since there is *no* liquid in the air gap between the constant-speed and adjustable-speed members. There's no "flooding" the Magnetic Drive or forcing of water into bearings. And you'll *never* find condensation in the bearings. The reason: a planned flow of air through the drive reduces bearing temperatures and exhausts any condensation which might occur as the unit cools off after use.

Stationary field construction eliminates slip rings. All bearings can be lubricated without disassembly, and grease chambers provide ample grease reservoirs. Coils and lead connections are encapsulated in a chemical- and heat-resistant polyester — and simplified construction eases inspection and servicing. The *all-new* design permits simple relocation of cooling inlet, conduit box, discharge, etc., regardless of direction of rotation.

If your plans call for adjustable speed drives — specify Louis Allis Adjustable Speed Magnetic Drive. Write for a copy of Bulletin 3650 — now available at your Louis Allis District Office, or from The Louis Allis Co., 467 E. Stewart Street, Milwaukee 1, Wisconsin.

LOUIS ALLIS

MANUFACTURER OF ELECTRIC MOTORS AND ADJUSTABLE SPEED DRIVES

PRESKOTE
PRESKOTE
PRESKOTE
PRESKOTE
PRESKOTE
PRESKOTE
PRESKOTE
PRESKOTE
PRESKOTE
PRESKOTE
PRESKOTE
PRESKOTE
PRESKOTE
PRESKOTE

PRESKOTE® ROLLS

... are compounded for your particular coating applications

Because every coating operation has its own peculiar set of requirements, every PRESKOTE roll cover is individually designed to do the coating job under your operating conditions. PRESKOTE Rolls offer these important points for more efficient, dependable service:

1. *They can be easily ground and polished.*
2. *They have an exceptionally smooth surface*
3. *They have good resilience, excellent recovery and minimize tail marking.*

STOWE-WOODWARD, INC.

Ask the man from S-W ...

... about the advantages of specifying PRESKOTE covers for your coating rolls. He'll demonstrate how PRESKOTE Rolls are unusually smooth and free of imperfections that might cause trouble during paper coating operations.

PRESKOTE coverings can be furnished in the hardness you require. PRESKOTE covers can be operated safely at temperatures up to 150°F. and are resistant to coating ingredients that are in use today.

STOWE-WOODWARD, INC.
Newton Upper Falls, Mass.
Neenah, Wisconsin
Griffin, Georgia

on the West Coast:
HUNTINGTON RUBBER MILLS, INC.
Seattle, Washington
Portland, Oregon
Port Coquitlam, British Columbia, Canada

Trends

Our Importance in International Trade

International trade in pulp and paper has grown to a value of nearly 3 billion dollars. This is equivalent to slightly over 3% of total world trade. That is one of the interesting points brought out in the report of the FAO Conference on pulp and paper held in Rome last month. It was estimated that world demand for paper and board would reach 88 million metric tons by 1965, up from 62 million tons in 1958, an increase of over 40%. It was further estimated that demand would increase to 134 million tons by 1975, more than double what it is today. To fulfill these demands, expenditures of $1 billion a year for new capacity will be required up to 1965 and $1.5 billion a year from then to 1975. Only North America and Western Europe are important exporters of pulp and paper, and the report indicates that roughly one half the above investment must be made in these areas. In spite of the recent rapid growth in pulp and paper production in the other areas of the world, their imports of paper have risen by 40% and pulp by 100%.

Employment Picture for Paper Indicated

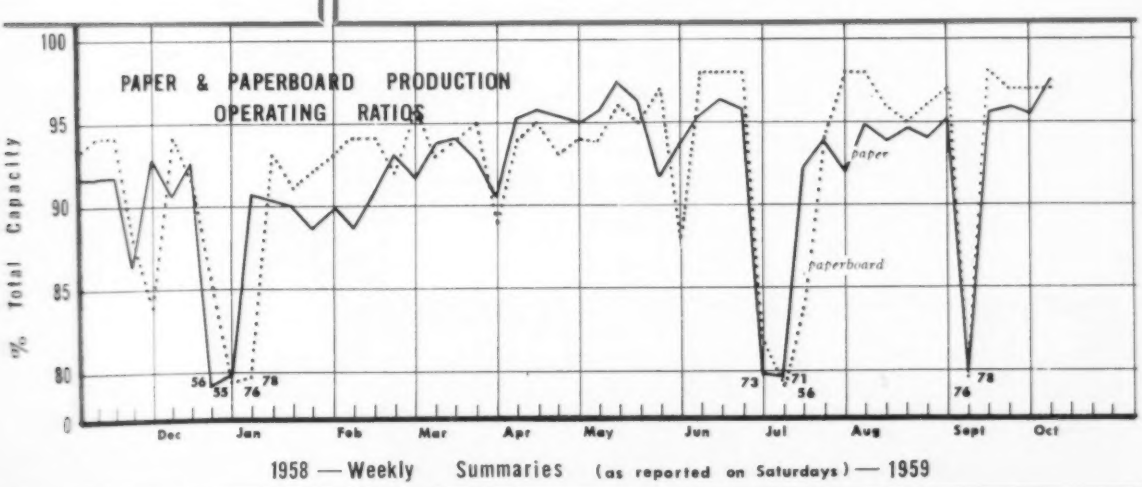
The National employment picture for paper and other products is indicated in a recent survey conducted by Manpower Inc. offices in over 100 U.S. cities. 18% of the respondents predicted an increase in employment, 2% a decrease, and 77% saw no change in present employment figures in our field.

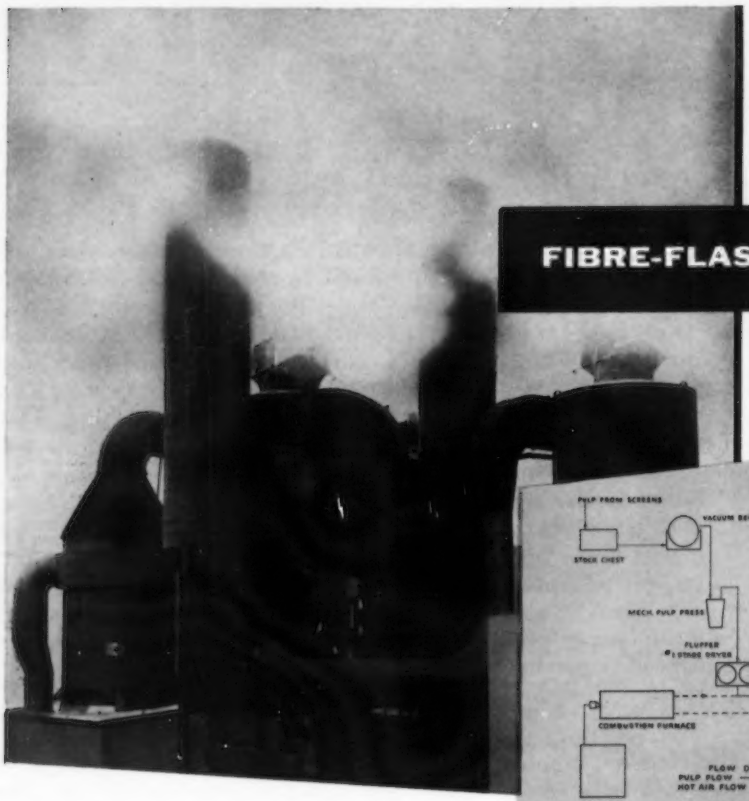
Possible Fine Paper Price Rises Foreseen

Outlook is for some modest increase in prices for a number of grades of fine paper in the near future, most notably rag grades.

Paper and Board Mills Run Near Capacity

During the first half of October both paper and board mills ran at between 97% and 98% of capacity.

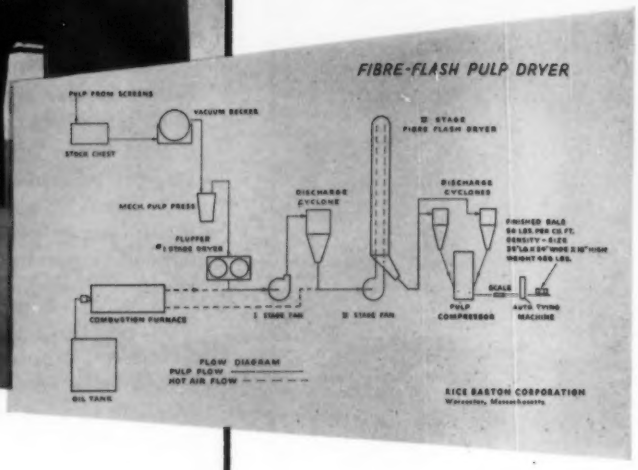




For Pulp Drying . . .

The Rice Barton

FIBRE-FLASH DRYING SYSTEM



The "Fibre-Flash" drying process for use with all types of pulp consists of dewatering the pulp, fiberizing the concentrated pulp material thoroughly to insure uniform drying, evaporation of the fiber-bound water to the required degree of dryness and baling or bulking the material into convenient form for storage or shipment.

The drying medium, either combustion gases or hot air, carries the material to be dried through separate stages of the fiber-suspension-type flash dryer. The relatively high intake temperature flashes-off the surface water and the drying tower provides the necessary time element to permit a complete heat exchange to extract the remaining moisture in the fibers. Drying occurs at high evaporation velocity which maintains a low fiber temperature.

PHOTO COURTESY OF JOHN BREAKEY, LTD.

Minimum capital investment and operating cost.

Peak thermal efficiency.

Reduced labor costs.

Simplicity of equipment with moving parts at a minimum.

Elimination of over-heating or case-hardening effect.

Ease of re-pulping.

RICE BARTON

RICE BARTON CORPORATION

WORCESTER, MASSACHUSETTS U. S. A.

Paper Machinery Builders Since 1837

PJT PAPER TRADE JOURNAL

WEEK OF OCTOBER 26, 1959

Longview Fibre Plans Acquisition of Downing Box

An agreement under which the Downing Box Co., Milwaukee, would become a part of the Longview Fibre Co. of Longview, Wash., a major West Coast producer of paper and paperboard and shipping containers, has been announced. This agreement is subject to approval by the directors and stockholders of the two companies and will be submitted to them within the next several weeks.

No details of the proposed action will be disclosed until the directors and stockholders of the two companies have acted upon the plan. Under the planned consolidation Downing Box would continue as a Wisconsin company, a separate corporate entity under the direction of its present management with no changes contemplated in either its production or sales staff.

The 33-year-old Longview Fibre Co. operates a paper and paperboard mill at Longview and box plants at Longview; Seattle, Wash.; Los Angeles and Oakland, Calif., and has a wholly owned subsidiary, the General Fibre Box Co., at Springfield, Mass. It produces paper and container board, containers themselves and a wide variety of paper products such as bags, towels, creped and treated papers.

Long-Struck Mill in Becket to Reopen

The Bancroft tissue mill in Becket, Mass., closed by a strike for almost ten months, is scheduled to reopen about November 1 under new ownership. Carolina Paper Mills Corp. is in the process of buying the 60-year-old Bancroft mill.

The Bancroft mill was purchased a year ago by Norman Eber of Greenfield and Clarence O'Neil of Hinsdale, N. H. They tried to start operations January 3 but the plant was struck by the 37-member union when the owners refused to recognize the union. After efforts to mediate proved fruitless the plant was again sold.

The mill has two machines for manufacturing facial and toilet tissue and a converting plant for processing the tissue into rolls or boxes. The new owners plan to operate the paper machines but will do the converting work at their North Carolina plant at least temporarily.

Noralyn Makes Commercial Run Of Hardwood Newsprint

Noralyn Paper Mills Inc., Baton Rouge, La., recently completed a commercial run of newsprint using pulp produced by the company's new process using hardwood only. Research work in developing the new process was carried out at the Herty Foundation, Savannah, Ga.

After development of the new process sufficient pulp was produced in the pilot plant of the Herty Foundation for a commercial trial. This pulp was shipped to the paper mill of Combined Paper Co., Combined Locks, Wis., where newsprint was produced on a 110-inch wide machine. This all hardwood newsprint was printed without difficulty under normal running conditions by the Milwaukee Journal, New York Times and Savannah Evening Express. Noralyn has entered into a contract with H. K. Ferguson Co. to design and build a 350 ton per day newsprint mill at Busche across the river from Baton Rouge, La. The new plant will use only hardwood.

Brown Co. Acquires Resi-Chem Corp.

Brown Co. has acquired a controlling interest in Resi-Chem Corp. of Swanton, Ohio. Although terms of the acquisition were not announced, the announcement stated Brown has acquired an additional 30 per cent interest, making it the holder of 80 per cent of the common stock of Resi-Chem. Since 1956, Brown has owned a 50 per cent interest in Resi-Chem.

Resi-Chem Corp. is a producer of wet strength resins used in paper making, adhesives used in the plywood industry and other fields, and synthetic resins in general. It presently operates manufacturing facilities in Swanton, Ohio; Gorham, N. H.; Corvallis, Ore.; and Houston, Tex.

Mo & Domsjö Install Two Stage Sulphite Process

Mo & Domsjo, large Swedish pulp producers, have recently converted their sulphite mill at Domsjo to use the Stora Kopparberg two stage sulphite pulping and recovery system. The new process has permitted the mill to change over from the use of balsam fir to pine. The new system has been in operation for several months.

The Stora two stage sulphite pulping and recovery process was described in detail in the September 7, 1959, issue, following the editor's inspection of its operation at Skutskär, Sweden.

Largest Paper Mill In Orient Ready

A new 22 million dollar paper mill, called the largest in the Orient, has been completed by Honshu Paper Co. at Kushiro on Japan's northern main island of Hokkaido.

The owners say it can produce 100,000 tons of paper annually, about 40 per cent of Japan's present production.

ON A PANEL to answer questions from educators regarding research in pulp and paper were, left to right: G. K. Dickerman, Consolidated Water Power and Paper Co.; R. M. Dorland, Abitibi Power and Paper Co., Ltd.; H. W. Bialkowsky, Weyerhaeuser Co.; J. J. Shipman, Kimberly-Clark Corp.; A. W. Plummer, Hudson Pulp and Paper Corp.; K. G. Chesley, The Crossett Co; and J. R. Salvesen, Marathon Division of American Can Co.

University Men Educated on Pulp and Paper Research

An opportunity was presented for pure research scientists in the pulp and paper industry and at the universities to exchange ideas at a conference held on October 9 and 10. Sponsored jointly by the American Paper and Pulp Ass'n. and the Technical Ass'n. of the Pulp and Paper Industry, the conference was at the Edgewater Beach Hotel, Chicago, Ill. Chairman of the conference was W. W. Moyer, director of research, Crown Zellerbach Corp., San Francisco, Cal.

Forty-one technical representatives of the pulp and paper industry and 42 key scientists from colleges and universities gathered from all parts of the United States and Canada for two days of intensive discussion of important fundamental research opportunities for future study. Research in drying, inking, strength properties and coating were a few of the many subjects covered.

E. R. Laughlin, secretary of the APPA Technical Committee, said that this second annual conference again provided the opportunity for closer relations between paper technologists and key educators and scientists concerned with fundamental research.

In his keynote address during the opening session of the conference, David Luke, president, West Virginia Pulp and Paper Co., said, "Our industry offers unexcelled career opportunities for research oriented persons with good scientific training, as well as for technically trained people who are interested in the practical applications of the fruits of research even more than in research itself."

In discussing the importance of research in the competitive market place, Mr. Luke stated, "Paper has made great inroads during the past generation on markets previously occupied by wood and textiles, glass and metal. It has been able to do so because of its versatility and economy, both born of research. New challenges to us from these competitors, from the oil industry and the chemical industry will spur us, I'm sure, to still greater efforts."

Southern Chemical Cotton Completes Modernization and Expansion Program

Southern Chemical Cotton Co. has just brought into operation a paper mill for the production of specialty papers for industrial applications, including air and oil filters for automobiles and airplanes, electrical laminates, and battery separators. Equipment for impregnation of the paper is due to go on-stream in the latter part of October. This will bring to completion an extensive modernization and expansion program. The company, located in Chattanooga, Tenn., has been a leading producer of cotton linter pulp for over 30 years.

Officials in announcing the installation of this additional equipment revealed a two-fold purpose. According to management the company will now be able to upgrade a part of its production and by doing so acquire a great deal of know-how to assist in providing a better pulp furnish on its customers who purchase linter pulp to process into paper.

In commenting on the project President W. D. Munson said, "Since 1954 we have been engaged in a program of modernization and expansion of our facilities. A continuous process for purifying cotton linters, automated by a central control panel, has been placed on stream. With instant control of every step in the intricate cycle constantly monitored by trained technicians we are able to produce "Chemcot" (registered name) of dependable uniformity to exact specifications. The most modern types of control units have been included in the new specialty mill which allow us to continue this exact control to finished paper.

"We, of course, expect to show a profit by upgrading a part of our pulp, but we are primarily in the pulp business, and in addition to manufacturing the best possible quality paper we plan to use this new equipment to constantly improve the quality and variety of pulp furnished to our customers."

This firm, the only one in the world devoted entirely to the manufacture of cotton linters, will be the subject of a detailed feature article soon to appear in PAPER TRADE JOURNAL.

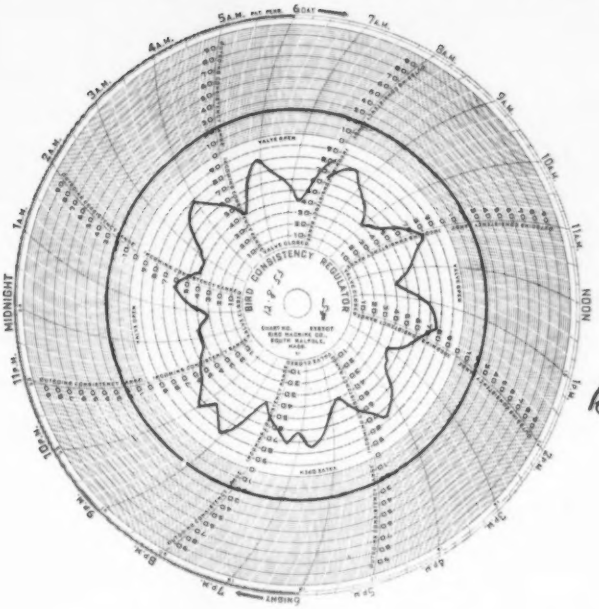
Paper and Board Production

According to the American Paper and Pulp Ass'n. the ratio of the United States production to mill capacity for the week ending Oct. 10, 1959, was 98.5 per cent compared with 97.0 per cent revised for the preceding week. The ratio was 91.6 per cent for the corresponding week a year ago.

The paperboard production ratio for the week ending Oct. 10, 1959, was 98 per cent compared with 97 per cent for the preceding week and 95 per cent for the corresponding week a year ago.

(Detailed statistics on page 68)

Vive la difference!



The difference Between These Two Lines is SAVINGS . . .

The peak-and-valley line on the Bird Consistency Regulator Chart records incoming consistency.

The water level line shows outgoing consistency — held to not more than 0.1% heavier or lighter than desired.

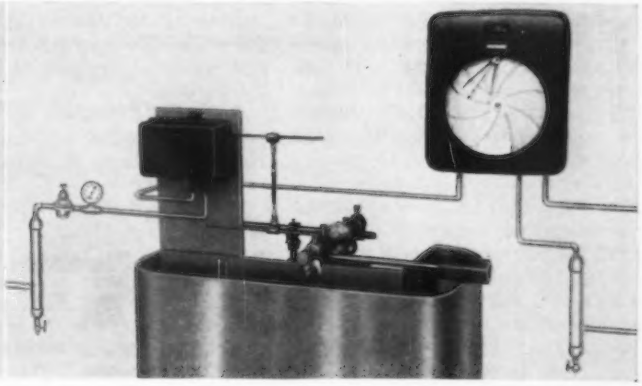
The difference is *savings* by avoiding overweight or rejects from underweight.

Bird Consistency Regulators are low cost, easy to install, inexpensive to operate. *Ask for recommendations and estimates.*

BIRD MACHINE COMPANY
SOUTH WALPOLE, MASS.

Regional Offices
EVANSTON, ILLINOIS • PORTLAND, OREGON
DECATUR (ATLANTA), GEORGIA
Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

THE BIRD CONSISTENCY REGULATOR



PAPER PEOPLE

C. E. Hanna

Kenneth Tench

G. L. Adams

R. E. Babcock

Gardner Announces Personnel Changes

Two promotions and two appointments have been announced by The Gardner Division, Diamond National Corp., Middletown, Ohio.

Charles E. Hanna has been promoted to superintendent of the retail box plant, Lockland, Ohio. Mr. Hanna joined the company in 1936 as a printing stockman. He became printing foreman in 1946. He was promoted to assistant superintendent, retail box plant, in 1953. Mr. Hanna is a graduate of Sharonville High School and attended the University of Cincinnati Evening College.

Kenneth Tench has been appointed product development specialist, where he will help to develop new ideas in the retail box field. Mr. Tench joined Gardner in 1953 and became superintendent of the retail box plant the following year. A native of St. John, Canada, he is a graduate of the Brantford Collegiate Institute at Brantford, Ontario.

Gordon L. Adams has been promoted to chemical engineer in the research and development department. He is a graduate of the New York State College of Forestry, Syracuse University. Mr. Adams came to Gardner in 1958 as a management trainee, and has been working as board mill technician.

Ronald E. Babcock has been appointed electrical project engineer. He is a graduate of Carnegie Institute of Technology.

Riverside Promotes Four

Riverside Paper Corp., Appleton, Wis., has named Norman H. Abitz, customers' service manager in the sales department; Victor DeDecker, general superintendent; Safford McMyler, chief engineer, and Henry Bennett, technical superintendent.

Mr. Abitz joined the company as a clerk on December 1, 1939, and subsequently was placed in charge of the order and shipping departments, a position he held until becoming customer's service manager.

Mr. DeDecker, has been associated with Riverside since April 1, 1919. He was paper mill superintendent before his promotion.

Mr. McMyler was plant engineer since December 1955 when he joined the firm.

Mr. Bennett, with the company since August 1958 was process superintendent.

Eastern Chooses Tilley As Controller

Arthur R. Tilley has been appointed controller of the Eastern Fine Paper and Pulp Division of Standard Packaging Corp. He had previously been Eastern's supervisor of budgets and procedures.

Joining Eastern as a management group trainee in 1947, Mr. Tilley received training in all sections of the controllers department.

Mead Transfers Three To Dayton

Lloyd W. Hale, assistant comptroller of The Mead Corp., has been transferred to Dayton from Chillicothe. Paul E. Murray, staff accountant, Chillicothe, and Thomas J. Bresnahan, resident accountant at Sylva, N. C., also have been added to the Dayton staff of the comptroller.

Mr. Hale, native of Chillicothe and Mead employee since 1935, was elected assistant comptroller in 1951 highlighting a 24-year career which began as a clerk in the statistical department at Chillicothe.

Mr. Hale steadily advanced to positions of greater responsibility with the company. During all but approximately two years, which he spent at Buena Vista, Va., and Philadelphia, he was assigned to Chillicothe.

Mr. Murray joined Mead as an accounting trainee at Chillicothe in 1951 following graduation from the University of Tennessee with a degree in business administration. Except for two years, 1953-1955, when he was on the accounting staff at the Kingsport Division, he, too, was assigned to Chillicothe.

Mr. Bresnahan was first employed by Mead in 1951 as a cost clerk at Chillicothe. Two years after he joined

YOU CAN COUNT ON IT—Alpha® Protein improves quality, speeds production, cuts cost

Alpha Protein is a chemically isolated soy protein used as an adhesive in producing today's finest coated papers.

Count on Alpha Protein to provide many advantages—in the mill, and in the product itself. For example, the extra solids possible with Alpha Protein give production increases up to 15% ... allow less drying time ... faster machine speeds ... higher coat weights.

In coated papers, Alpha Protein imparts a true-white brilliance ... improved opacity ... smoother surface ... high resistance to water.

Count on Chemurgy Division as a reliable source where careful control through all manufacturing stages insures uniform quality between shipments.

And finally, count on Chemurgy technical men being anxious to give special attention to *your* problem.

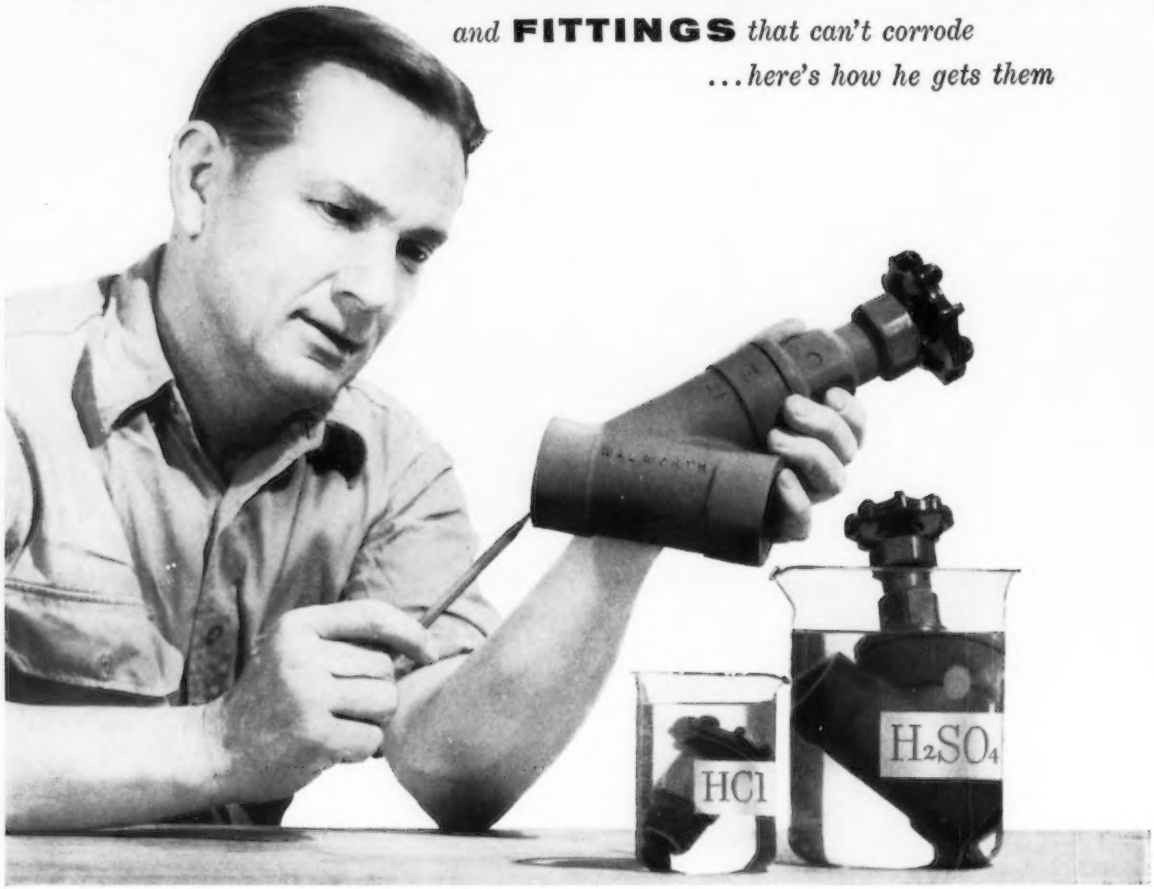
25 YEARS OF CHEMURGY EXPERIENCE

CENTRAL SOYA COMPANY, INC.
CHEMURGY DIVISION

1825 N. Laramie Avenue · Chicago 39, Illinois

This is a sample of 4-color process lithography on Alpha Protein-processed paper

the **WALWORTH CUSTOMER** *wants* **PLASTIC VALVES** *and* **FITTINGS** *that can't corrode ...here's how he gets them*

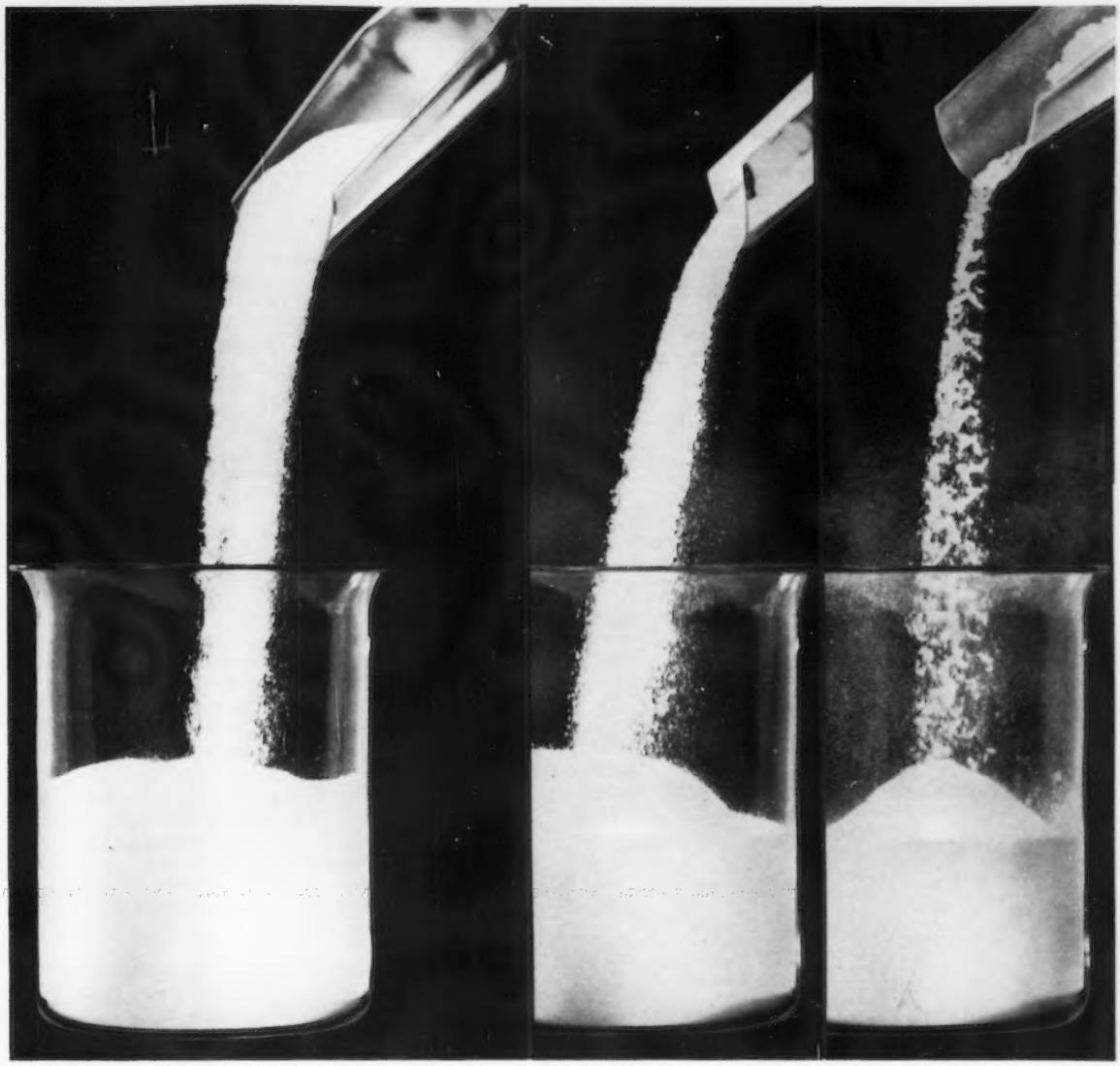


When the Walworth Customer is faced with the control of corrosive fluids, he looks at dozens of plastic valves and checks them for himself. He demands answers to questions like these: Can this valve corrode? Is it toxic? Is it non-aging? In Walworth PVC Valves and Fittings, the Walworth Customer finds his answers. Not only is PVC nontoxic and non-aging, – it *can't* corrode. *All* parts are made of plastic. Valves and fittings have high burst strength. Given those facts the Walworth Customer buys.

That may be the way you like to buy valves, too. If you insist on knowing about materials, workmanship and high quality, we'd like you for a Walworth Customer, too. For the newest literature on the complete line of PVC Valves and Fittings, get in touch with your Walworth Distributor.

Or write **WALWORTH** *750 Third Avenue, New York 17, N. Y.*
DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

WALWORTH SUBSIDIARIES: ALLOY STEEL PRODUCTS CO. • CONOFLOW CORPORATION • GROVE VALVE AND REGULATOR CO. M&H VALVE & FITTINGS CO. • SOUTHWEST FABRICATING & WELDING CO., INC. • WALWORTH COMPANY OF CANADA, LTD.



this simple test demonstrates

Westvaco® Soda Ash

flows more freely... dusts less!

Pour a scoopful of Westvaco Soda Ash into a container (as we've done, left) Do the same with other ash (center and right)!

Note how quickly Westvaco Soda Ash pours, without raising clouds of dust . . . demonstrating that it will be faster and cleaner to unload and handle in your plant. That's because Westvaco Soda Ash is composed of unique, needle-like crystals that literally *roll* out of the scoop or hopper car. They don't grind themselves down to dusty fines.

Bigger surface area makes them faster to dissolve, too, and their chemical purity produces crystal-clear solutions. Westvaco Soda Ash is extremely low in iron, salts, heavy metals and insolubles . . . and entirely ammonia free.

We'd like to suggest a trial order. It's the best way you can demonstrate *all* the advantages of Westvaco Soda Ash in your process.

Putting Ideas to Work

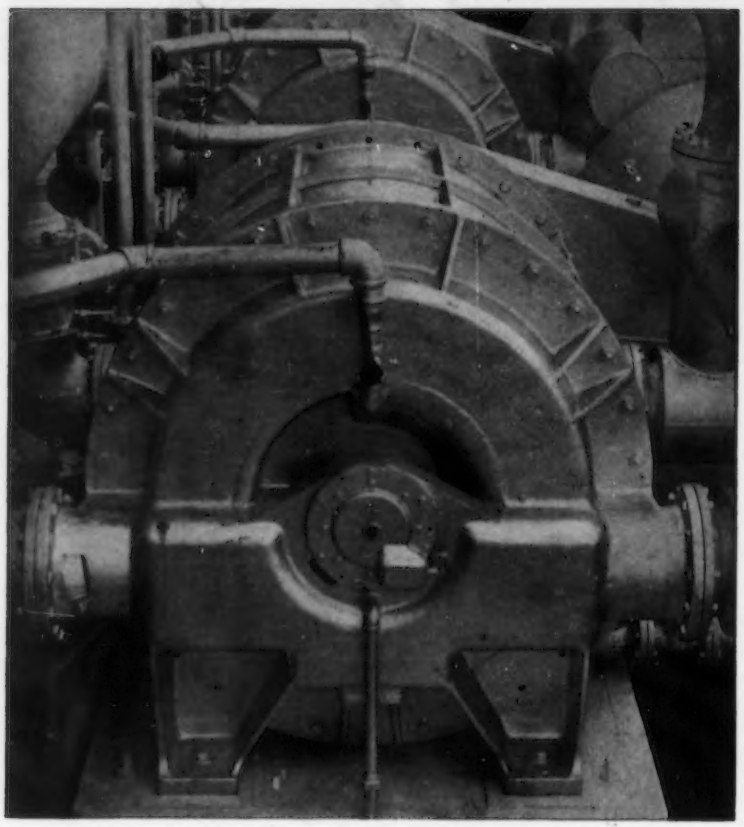
fmc
FOOD MACHINERY AND CHEMICAL CORPORATION ®

FOOD MACHINERY AND CHEMICAL CORPORATION

Westvaco Chlor-Alkali Division

General Sales Offices:
161 E. 42nd STREET, NEW YORK 17

High machine speeds?
High temperature headbox stock?
You need NASH Vacuum Pumps!



Air from the suction rolls on paper machines carries with it substantial quantities of moisture. This considerably reduces the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump, because of the unique principle of operation, the bulk of this vapor is effectively condensed inside the pump. The total capacity of a Nash is therefore increased.

When you specify a Nash Pump it can be closely sized to the job. It is not necessary to select an over-sized unit, because the rated capacity of the Nash may be relied upon.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

441 WILSON ROAD, SO. NORWALK, CONN.

the company he transferred to the internal audit staff and in 1956 he transferred to Sylva as resident accountant, the position he held at the time of this recent transfer.

W. A. Hosmer

Hurlbut Names Hosmer Willow Mill Supt.

William A. Hosmer has been named superintendent of the Willow mill, one of two operated by Hurlbut Paper Co. at South Lee, Mass.

Mr. Hosmer joined Hurlbut in 1954 as a research chemist and served as assistant to the general superintendent and assistant superintendent of the Willow mill. He is a graduate of the University of Massachusetts and received an M.S. degree in chemistry from Middlebury College in 1950. Before joining Hurlbut Mr. Hosmer was with General Electric as a research chemist.

W. G. Schopf

Packaging Corp. Appoints PR Dir. and Contoller

William G. Schopf has been promoted to director of public relations and advertising for Packaging Corporation of America.

Mr. Schopf formerly was public relations director of American Box Board Co. which recently merged with Ohio Boxboard Co. and Central Fibre Products Co. to form Packag-

D. W. Boylan

ing Corporation of America. In the new post, he will be in charge of Packaging Corporation's public relations and advertising program.

D. W. Boylan has been appointed controller for Packaging Corporation of America. He was formerly controller of the Ohio Boxboard Co.

In his new capacity, Mr. Boylan will be in charge of the accounting, budgeting, auditing and financial reporting phases.

Macauley Elects V-P's

The M. L. Macauley Co. Inc., of New York City, sales representatives of many paper and paperboard mills, has announced the election of Max Sachs and Michael P. Donovan as vice presidents.

Mr. Sachs has been with the firm since 1932, and Mr. Donovan joined the company in 1954.

The M. L. Macauley Co. was founded in 1922, and today is one of the largest mill representative firms in the country. The company is headed by Milton L. Macauley, president, and Robert C. Macauley, executive vice president.

Seith Succeeds Diggs At Mosinee Paper Mills

Robert T. Seith has been appointed sales manager of Mosinee Paper Mills Co. He succeeds John R. Diggs, who retired October 15 after 25 years with the company.

Mr. Seith began his career with the Mosinee, Wis., firm in 1949, immediately after graduation as a chemical engineer from Purdue University. He has held the positions of research chemist, director of product development, assistant to the sales manager, and assistant sales manager. He has figured prominently in the success of a number of Mosinee paper developments including Scrimtex, a patented non-laminated reinforced paper, NeverMold, a permanent and mold-resistant paper and Seven-O, a neutral paper for industrial and military packaging purposes.

Consolidated W P & P Appoints Three

Three personnel appointments at Consolidated Water Power & Paper have been announced.

Donald G. Pryor has joined the technical staff at Biron division as a process engineer. Mr. Pryor, a graduate of Western Michigan College, where he received a B.S. degree in paper technology, has been employed by Watervliet Paper Co. for the past two and one-half years.

Perry E. Hawkins has been employed at the company's Ahdawagam division as a sales representative specializing in the sales of tubes and cores. He has been with the Curtiss Candy Co. at Wisconsin Rapids.

Donald E. Walker has joined the company's engineering department as a mechanical engineer. He has been employed by the R. R. Donnelley & Sons Co. for the past six years. He received a B.S. degree in mechanical engineering from the University of Illinois in 1952.

Whites can be uniform and bright!

with Sandoz Leucophor BS Liquid

Freedom from graniting . . . even-ness of strike . . . level, bright tone . . . call it what you will . . . these terms tell the technical story of Leucophor BS Liquid. From the time this Sandoz product first came on the market, tests and paper mill men's testimony have proved conclusively: Leucophor BS Liquid gives bleached papers and boards a brightness that is startling as well as economical.

Examine your own fluorescent white papers under an ultra-violet light. If they show graniting, now is the time to put in a call for Sandoz. And for a quick report on the why and how of fluorescent brightness measurements, 'phone or write:—SANDOZ, INC., 61-63 Van Dam Street, New York 13, New York—ALgonquin 5-1700.

District Offices: Charlotte, Cincinnati, Fair Lawn, N. J., Hudson, Mass., Los Angeles, Philadelphia.

SANDOZ

THINKS AHEAD WITH PAPER

J. D. Buchanan

K. Harvey

E. Raines

A.N.D. Co. Announces Staff Changes

Two important changes have been made in the supervisory staff of the mill engineering and mechanical departments of the Anglo-Newfoundland Development Co., Ltd., at Grand Falls.

J. Douglas Buchanan has been promoted from assistant superintendent of the mechanical department to superintendent of the mill engineering department. He succeeds T. Medzwiecki, who has resigned. Kevin Harvey, formerly general foreman is now assistant mechanical superintendent.

Mr. Buchanan, a native of London, England, graduated in engineering from Glasgow University. He joined the A.N.D. staff as a mechanical engineer in 1957.

Mr. Harvey, a native of Grand Falls, joined the company in 1949, starting as a wood scaler. In 1955 he became general foreman of the mill engineering department.

Other staff changes in the mechanical department include E. Raines who became general foreman, and T. Pitcher, general millwright foreman.

T. Pitcher

NEW PUMPS AT USED PUMP PRICES

1—Vertical 15,000 GPM @ 30' head, all bronze Worthington, driven by 150 HP @ 1200 RPM Terry Turbine, 22" suction, 22" discharge. PRICE: $2500.00

2—12,500 GPM @ 24' head, vertical, size 20 x 20 LSV, all bronze. Mfg. by Allis Chalmers. PRICE: $3500.00 each

1—3000 GPM @ 25' head, vertical, 1125 RPM, all bronze pump, 14" suction, 14" discharge. Mfg. by Gould PRICE: $1500.00

1—3000 GPM @ 50' head, 12" suction, 10" discharge, all bronze, 1200 RPM, Worthington. PRICE: $1500.00

4—1500 GPM @ 54' head, vertical, all bronze, Gardner-Denver pump, 8" driven by 30 HP, 230 volt, DC motors. PRICE: $1200.00 each

2—1500 GPM @ 54' head, vertical, all bronze, Gardner-Denver pump, 8" driven by 30 HP, 440 volt, AC motors. PRICE: $1200.00 each

1—425 GPM @ 94' head, vertical, circulating pump, 5" suction 4" discharge. Mfg. by Dayton-Dowd. PRICE: $500.00

6—100 GPM @ 35' head, all bronze, 3" suction, 2" discharge, driven by 2 HP, 440 volt, AC motor. Mfg. by Buffalo. PRICE: $150.00 each

12—New Chicago vertical all bronze sewage pumps—4" less motors. PRICE: $250.00 each

8—500 GPM @ 750 PSI, Worthington, 3 stage, 5000 RPM, driven by Worthington 300 HP 450 PSI, 575 PSI turbine.

1—500 GPM @ 1150 PSI vertical, driven by 500 HP, 800 PSI, 7000 RPM, Worthington turbine.

1—680 GPM @ 750 PSI, 3 stage De Laval, driven by 400 HP, 440 PSI De Laval turbine. 5000 RPM.

1—14 x 9 x 24 Vertical simplex Worthington main feed pump, capacity 200 GPM @ 400 lbs.

1—165 GPM @ 600 PSI De Laval 3 stage, driven by De Laval, 375 PSI-440 PSI, 5000 RPM turbine.

We also have a large stock of turbines from 1 HP to 9000 HP, condensing and non-condensing.

MARITIME POWER CORPORATION

39 Broadway • New York 6, N. Y. • HAnover 2-3967

Westvaco Quality Papers

Westvaco manufactures its products from virgin chemical pulps, and carefully maintains precise uniformity and quality standards . . . your assurance of top performance.

Printing Papers . . . Coated and uncoated letterpress, offset and gravure.

Writings . . . Bond, mimeo, duplicating, ledger and multipress.

Bristols . . . Uncoated index and postcard, coated two sides and coated one side board.

Label and Lining Papers . . . Coated and uncoated letterpress, offset and gravure, coated washproof for letterpress and gravure.

Converting Papers . . . Envelope, tablet, drawing, coating raw stock, register bond, lace, and place mat.

Bleached Boards . . . Cup, coated and uncoated carton board, frozen food container, milk bottle, file folder and tag.

Kraft Papers . . . Bag, multiwall sack, envelope, asphalting, impregnating, waxing, and new CLUPAK* stretchable paper.

Containerboard . . . Linerboard and corrugating medium.

Market Pulp . . . Bleached and unbleached sulphate.

Write: West Virginia Pulp and Paper Company, 230 Park Ave., New York 17, N.Y.

**CLUPAK, Inc's. trademark for extensible paper, manufactured under its authority.*

West Virginia Pulp and Paper

HOW LONG
NOV OCT 1957
AUG 26 1957
MAY 3 1957
JUL 24 1958
AUG 31 1958
SEP 30 1958
APR 8 1958
FEB MAR 7 1958
DEC 6 1958
DEC 1 NOV 28 1958
OCT 18 1958
NOV 11 1958
DEC 2 1958
JAN 4 1959

SINCE YOU'VE REVIEWED YOUR CHEMICAL BUYING HABITS?

Your Columbia-Southern Representative spends much of his time studying the most efficient use of the products he supplies to the pulp and paper industry. You'll find it worthwhile to tap his wealth of information on such matters as the comparative costs of different forms of chemicals, and the most economical means of shipping to a given location.

Here are just a few of the points your Columbia-Southern man can offer you sound advice on:

CAUSTIC SODA—Are you better off using anhydrous or liquid? Better off using 50% liquid or 73%? Your Columbia-Southern man can survey your processing equipment and your volume of consumption, and give you a sound, practical answer.

CHLORINE—Are you using the best storing and handling method? Perhaps recent changes in your processing operation call for a re-examination.

HYDROGEN PEROXIDE—Is your present bleaching system actually the most efficient and economical for your needs? Your Columbia-Southern Representative can help you determine whether it is or not.

And Columbia-Southern offers a special service to the pulp and paper industry. That's the Pulp and Paper Laboratory at the Barberton, Ohio, plant, where specialists make pilot runs of every conceivable process, to evaluate processing systems and formulations. Your Columbia-Southern Representative will show you how this service benefits you.

Make it a point to talk to your Columbia-Southern man soon. You can profit a great deal from his experience and his recommendations.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

A Subsidiary of Pittsburgh Plate Glass Company • One Gateway Center, Pittsburgh 22, Pennsylvania

DISTRICT OFFICES: Cincinnati • Charlotte • Chicago • Cleveland • Boston • New York • St. Louis • Minneapolis • New Orleans • Dallas • Houston • Pittsburgh • Philadelphia • San Francisco. IN CANADA: Standard Chemical Limited

This 300-foot Langston corrugator is equipped with the latest electronic devices for quality control. Control panels are so arranged that all stations can be operated from any one panel. Roll of paperboard at left will serve as one face of finished corrugated board. Roll just past first control station is the corrugating medium; a roll at second control station provides other face of the board. Operation is truly continuous as new rolls can be put on any time.

Owens-Illinois Opens New Corrugating Box Plant

One of the world's most modern plants for the production of a full range of corrugated shipping boxes —the workhorse of the packaging industry—was officially opened October 15 in Chicago by the Owens-Illinois Glass Co.

Star of the show was the 85-inch Langston corrugator capable of top speeds found in the industry. The machine will run at a rate of 650 lineal feet per minute. This is equivalent to 4,550 sq. ft. of corrugated board per minute, or 65 million square feet per month. At this rate more than 4,000 tons of paperboard stock will be consumed per month, supplied principally by O-I's mills in Wisconsin, Georgia and Florida.

Built by Paper Products Division, the 224,400 square-foot facility is located on a 40-acre tract adjacent to the Calumet River on Chicago's extreme southern limits. At full operation, it will employ 350 people with an annual payroll of $2 million.

Architectually, the new plant features what is said to be the world's largest industrial installation of Thinlite curtain wall system. A product of O-I's Kimble Glass subsidiary, Thinlite is prefabricated hollow glass tiles set in aluminum frames. The east wall of the box plant contains 1,000 of these two-by-five foot panels containing 10,000 glass tiles. Other walls are constructed of 18,000-lb. pre-cast concrete panels. A very large "glass" roof is composed principally of Owens-Corning Fiberglas. Skidmore, Owings and Merrill of Chicago designed the new plant; Luria Engineering Co., Bethlehem, Pa., was the prime contractor.

On the matter of transportation facilities, an under-roof railroad siding and a truck dock to accommodate 15 tractor trailers have been provided. Most of the paper stock raw material will come to the plant by water on the adjacent Little Calumet River waterway.

Owens-Illinois earlier in the year closed its box plant in the Clearing industrial district and moved to the new location because of the need for increased production capacities.

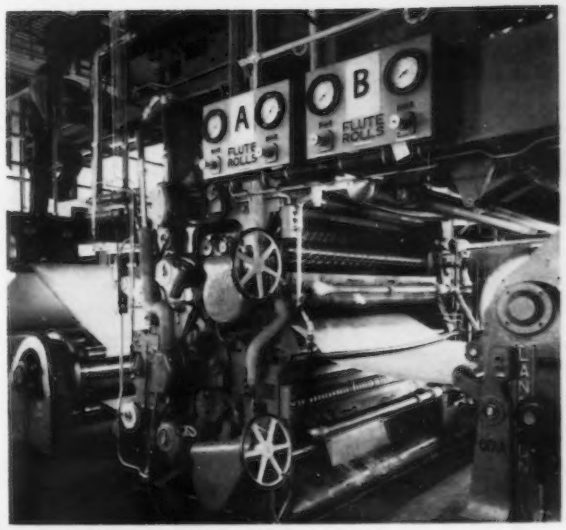
In commenting on this at the opening ceremonies, Hugh C. Laughlin, executive vice president of O-I's box division, pointed out that it has taken the corrugated box field 53 years to reach the 110-billion-square-foot mark predicted for this year. "It was in 1905 that the railroad first accepted goods for shipment in corru-

gated. The next 100 billion square feet should come in a relatively short period of time because we are developing new markets for corrugated packaging every year and are steadily improving our end product."

Mr. Laughlin further pointed out that the bright outlook for the corrugated container segment of the packaging industry indicates an equally bright one for the U. S. economy generally. "Corrugated boxes are used by every segment of American industry to take both durable and non-durable goods to market," he explained. "As a result containerboard sales are considered one of the most reliable indices of the state of the U. S. economy as a whole. The substantial gains expected in containerboard therefore reflect a promising trend for the nation's business."

The new plant is Owens-Illinois' seventh in Illinois. Glass container plants are located at Streator and Alton, a closure and plastics plant at St. Charles, a machine manufacturing plant at Godfrey, another box plant at Madison and a facility at Chicago Heights to produce special glass containers.

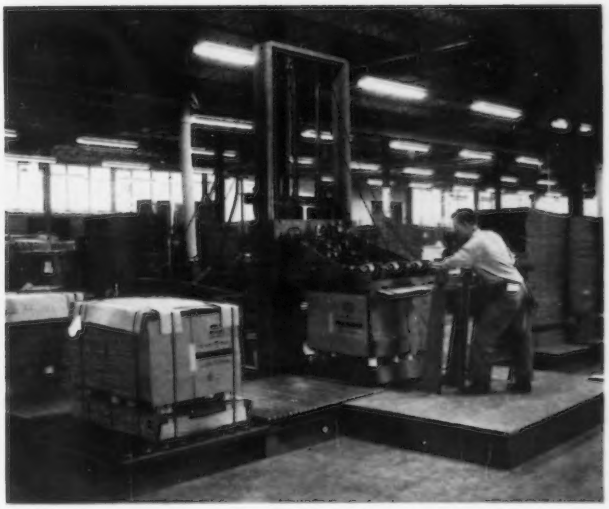
In addition to the plants in Illinois, O-I operates 13 glass container plants, 19 corrugated and solid fiber shipping box plants, two closure and plastics facilities, five paper mills, two tableware plants, a multiwall bag plant and four plants of Kimble Glass subsidiary, produce television picture tubes, glass block, and scientific and laboratory glassware.



Flutes are applied in this section. In a single operation the corrugating medium is shaped and glued to one face of the linerboard.

Equipped with a double cut-off the corrugator can deliver two different sizes of board at one time. Here one size coming off the side is being stacked onto a pallet while another size is being delivered straight down the conveyor to the right.

▼ This printer-slotter will handle sheets of corrugated up to 60 by 126 inches, will slot and print two-color messages at the rate of 175 sheets a minute.



▲ Flattened out corrugated boxes ready for shipment are automatically compressed and banded by this machine. These units have a self-contained loading device. Cross sections of corrugated tube are glued to scrap board to form a built-in pallet for movement in the customer's plant by fork lift truck. This machine can handle varying requirements for the plant's entire production.

Novel Slitting System Makes Its Bow At West Virginia Mill

Two old winders at the Tyrone, Pa. mill were converted quickly and economically from score cut to this unique new shear cut slitting system. Improved quality of rolls has been the result.

With a minimum of time and complications two old machine winders at the Tyrone, Pa., mill of West Virginia Pulp & Paper Co. were converted this month from score cut to the Jagenberg "Multi-Shear" slitting system. This conversion was accomplished in less time and at considerably lower cost than usually associated with a conversion of this type.

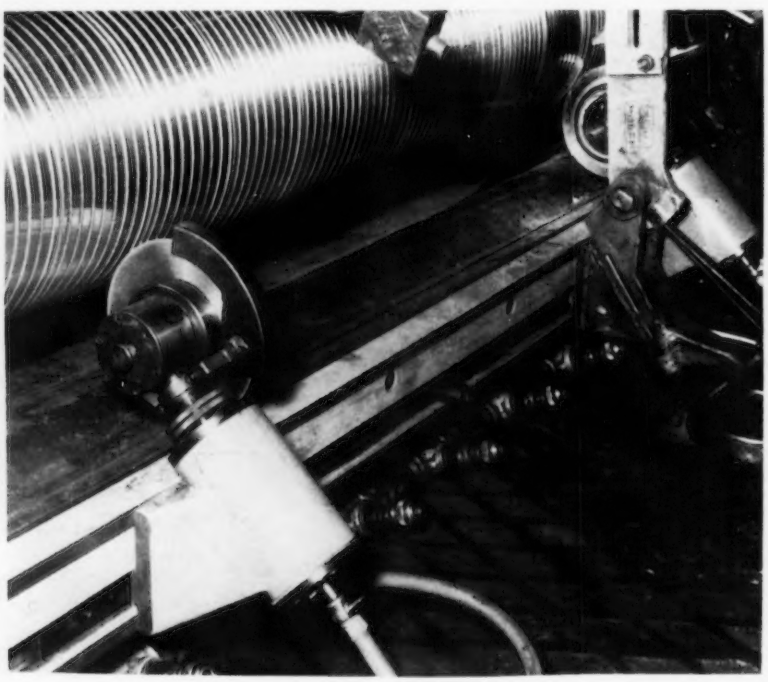
Has Expansion Shaft

The "Multi-Shear" slitting system is a patented system consisting of a pneumatic expansion shaft onto which are fitted a large number of four-inch wide bushings which cover approximately 94 per cent of the working surface of the shaft. The remainder of the surface allows movement and positioning of the bushings. Into each of the bushings are cut a number of grooves at one-half inch intervals so that one edge of the groove is cut on a bias. The bushings are made of rock-hard high carbon steel and take the place of the customary bottom slitter bands. In order to adjust the bushings on the pneumatic shaft, air is exhausted from plastic hoses which are contained in recesses in the shaft and are covered by metal strips. These hoses when inflated lock the bushings in place. They are deflated simply by turning a valve. Mill air supply of 50 to 60 p.s.i. suffices to inflate them again.

The new slitting system was installed on two Camachine 18 winders operating on uncoated book, offset and allied grades at West Virginia's Tyrone mill. No. 1 winder has a face width of 88½ inches, No. 2 is 107¾ inches wide.

Firm Guidance of Web

The main difference between this slitting system and conventional

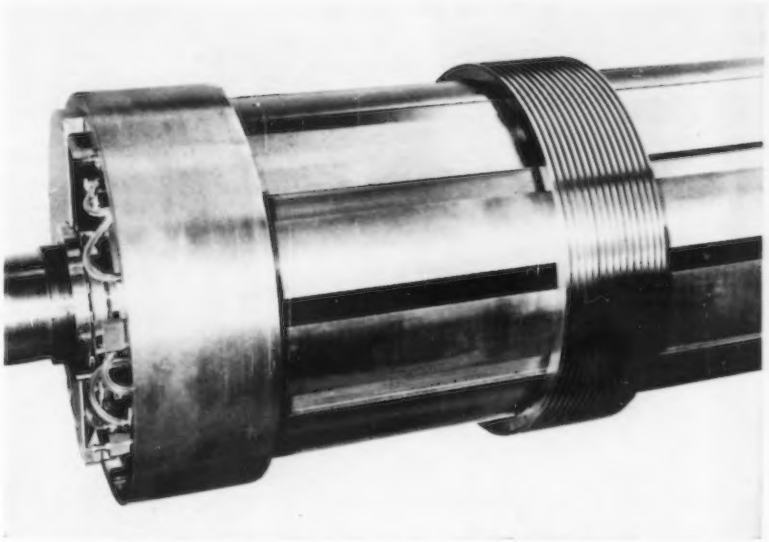


Close-up of bottom slitter shaft and top slitters. Air pressure is used to engage slitter blade with cutting edge of groove.

shear-type slitters consists of the fact that the paper wraps the "Multi-Shear" slitter roll. This accomplishes firm guidance of the web and eliminates the need for additional fly rolls to guide the web into the slitter. The Jagenberg people claim that the wrapping of the slitter roll will in no way mar the surface of the paper.

The top slitters installed at Tyrone are pneumatically operated. The mechanism is such that air pressure accomplishes the insertion of the slitter blade into the cutting groove and subsequently makes the blade execute a lateral motion to engage with the cutting edge of the groove. Depth of slitter insertion and angle of shear cut are adjustable.

Since the "Multi-Shear" slitter roll is wrapped by the paper in the same manner as the platen roll in the score cut, the slitter roll simply replaced the platen roll on the Tyrone winders. The top slitters were mounted on the dovetail which previously held the score cut knives. A rail was bolted onto the dovetail to hold the top slitters which, together with the rail, were supplied by Jagenberg.



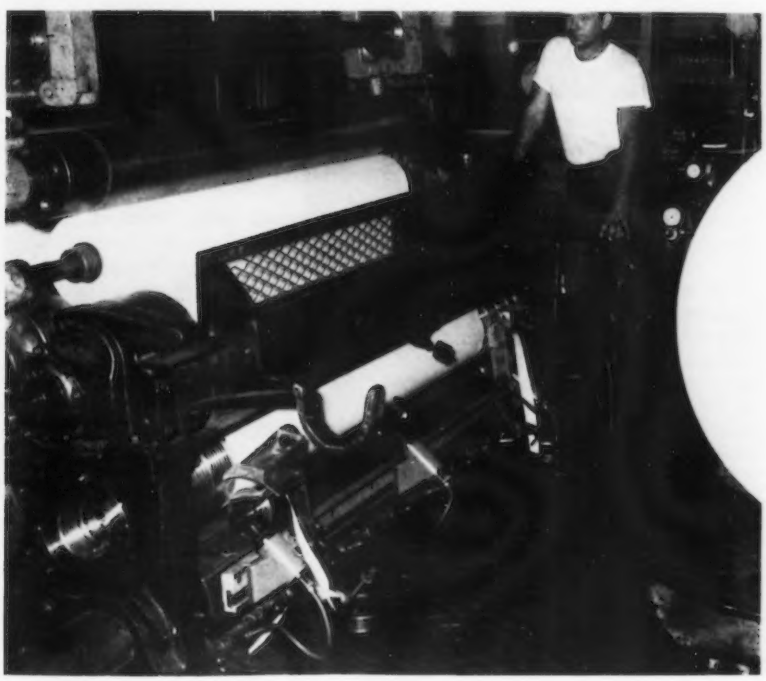
Slitter shaft dismantled, showing recesses for plastic hoses. A single bushing with its multiple cutting grooves is shown on the shaft.

Less Regrinding

The fact that hundreds of cutting grooves are positioned on the slitter shaft is a material help in accomplishing fast size changes. It also greatly reduces the need for regrinding of the bottom slitters since several grooves of any bushing will have to be worn before the bushing has to be taken out for sharpening. However, the feature which convinced West Virginia people to pioneer this slitting system on their winders at Tyrone was the fact that its compatibility with the score cut saved the mill many thousands of dollars as against conversion to shear cut by conventional methods.

Henry W. Mooseker, general superintendent of the Tyrone mill, is highly satisfied with this change over. The old score cut did not satisfy the demands of many of West Virginia's customers for clean-cut rolls without fuzz on the edges. Mr. Mooseker states that the new equipment has immeasurably improved the quality of the rolls produced on winders No. 1 and 2.

The system is made by Jagenberg-Werke AG, Duesseldorf, West Germany, and supplied through its U. S. representatives: American Paper & Pulp Co., Inc.



Conversion completed. Winder is back in operation at Tyrone mill. Note how web wraps slitter roll providing firm guidance.

New Dry Process Intrigues Deinkers

Waste paper users hear about this and more at their fourth annual Deinking Conference held October 8 and 9.

Ernest F. Barker,
Special Correspondent,
Paper Trade Journal

Dry deinking of waste paper stock held the center ring at the fourth annual TAPPI Deinking Confab. Conferees heard Arthur G. Dreis, A. G. Dreis Associates, Chicago, reveal a method wherein fiber and contaminants may be separated in a "muller" by abrasion and cobrasion. Use of steam or chemicals are not required.

Those dienkers who had come to the conference with the hope of being witness to the revelation of a new, unconventional and practical process of dry deinking, did agree that here was "an interesting new approach."

They were disappointed however, in that the paper, billed as "A Dry Process for Deinking," did not outline specifics. This feeling was summarized by Miss R. M. Cobb technical advisor to Lowe Paper Co., who asked from the conference floor: "Does anyone here know whether this is more than just a pipedream?" The hopeful deinkers were additionally disappointed by the fact that Mr. Dreis, was absent. Mr. Dreis sent his apologies to the conference for being unable to attend. His paper was subsequently read by H. E. Corwin, session chairman.

In summarizing its impressions of this presentation, PAPER TRADE JOURNAL is inclined to agree with most of the conferees that considerably more light needs to be shed on this "dry deinking process." It appears certain that much more work is required and that a dry deinking process able to handle all types of waste paper in conventional deinking mills, has yet to be found. Pulp produced by deinking methods and ready for conventional use in the mill would be a tremendous economic boon. Such a development would even be of great significance if "dry-deinking" should prove to be only a useful supplement to more conventional deinking. In fact, it seems reasonable that some of the points presented by this paper may well find useful application as conventional pre-deinking treatment to assist conventional deinking methods in overcoming some of the well known problems which have of late progressively plagued deinking mills.

Coffee break: Robert Sparcino, sales representative, Monsanto Chemical Co., Everett, Mass.; J. R. Radley, chemist, Falulah Paper Co., Fitchburg, Mass.; and S. J. Young, technical supervisor, Crown Zellerbach Corp., Carthage, N. Y.

In an interview with Ralph Kumler, of the Waste Paper Utilization Council, it was learned that Mr. Dreis has submitted a sample of "dry deinked pulp" to the Council. "This sample was made from printed magazine stock, covered with colored ink, and it was quite clean," Mr. Kumler told PAPER TRADE JOURNAL. He indicated "the sample contained extremely small specks, apparent only with a magnifying glass. The sample appeared quite clean and it had a newsprint-like appearance." Mr. Dreis' paper is discussed in detail later in this report.

Other main rings of interest centered around the effect of steadily increasing groundwood content in magazine stock and the ever present deinker's problem of nondispersable adhesive and plastic materials. The conference was held October 8 and 9 in the Roger Smith Hotel in Holyoke, Mass. That keen interest in deinking continues was again shown by the conference attendance of 120, up slightly from last year, and the

decision of the committee to keep the conference an annual affair rather than a proposed biannual basis. Refreshingly, millmen held their own at this conference, with four papers and four panel presentations evenly split between mill men and suppliers.

W. D. Boggess, the Beveridge Paper Co., chairman of the TAPPI Deinking Committee, was toastmaster at the Thursday evening banquet, which heard John Moriarty, of A. D. Little, Inc., Cambridge, Mass., discuss "The Role of Flavor in Food Acceptance." Mr. Moriarty discussed the anatomy of taste and smell but hardly touched on deinking or any other phases of the paper industry. Disappointingly, he did not delve into one of the subjects of keenest interest in the deinking and board industry today: Pure food and drug laws, possible coming changes in these laws and how they will affect the paper industry.

The afternoons of the two-day conference were spent in plant visits. On Thursday afternoon the deinkers visited Baldwinville Products Division, Baldwinville, Mass., to see a modern deinking plant which supplies a tissue and toweling operation and Erving Division, a napkin and towel converting operation. Both plants are part of Erving Paper Mills. On Friday afternoon the conferees visited Crocker, Burbank and Co. to tour the mill's 100-ton deinking plant, laboratory and paper mill, which manufactures book, coated, uncoated and industrial grades.

The Fourth Deinking Conference was sponsored by the TAPPI Deinking Committee. Committee officers are: W. D. Boggess, the Beveridge Paper Co., Indianapolis, Ind., chairman; E. F. Andrews, International Paper Co., Niagara Falls, N. Y., vice chairman; A. J. Felton, The Black-Clawson Co., Middletown, O., secretary; J. W. Wendell, Jr., Tileston & Hollingsworth Co., Hyde Park, Mass., conference chairman; H. E. Corwin, Diamond Gardner Corp., Palmer, Mass., program chairman; T. T. Allan, Virginia Smelting Corp., East Walpole, Mass., treasurer.

The next TAPPI Deinking Conference will be held at Appleton, Wis. Date is yet to be announced.

The Waste Paper Utilization Council featured a display of objectionable materials in deinking processes at the TAPPI Deinking Conference. Discussing the display are: R. M. Cobb, technical advisor, Lowe Paper Co.; Harold Hickson, research and development department, Continental Can Co.; and Ralph Kumler, manager, Waste Paper Utilization Council.

A Dry Process for Deinking

In his paper "A Dry Process for Deinking," A. G. Dreis briefly reviewed the present status of the deinking industry and then suggested that "although the optimistic predictions for continually expanding markets for paper imply an increasing supply of waste paper, the cost and space requirements associated with deinking plant sludge, threaten to inhibit further expansion of deinked pulp production."

This gave rise to the examination of the possibility of reclamation of high quality pulp from waste papers with unconventional means. A dry process was believed feasible, prompted by the industry's desire to eliminate the sludge problem which is part of deinking mill effluents while maintaining one of the deinking mills' prime objectives: adequate control over removing sticky contaminents from the waste paper.

In the search for a dry deinking process, two limitations were placed on the work: (1) Air or gas was to be used in place of water as the suspending medium; and (2) all separated contaminents and normal shrinkage were to be obtained in dry form. Five approaches to these objectives were considered:

1. Abrasion—The success of this approach depends on waste remaining in a flat uncrumpled form.

2. Cobrasion—Here too waste paper would be required to remain slack so that the surfaces can rub against each other.

3. Ink-Exchange—it was considered feasible that certain types of particulate matter might be treated with solvent, oxidizers or reducing agents and that these could be used in absorbing or otherwise attracing the ink onto themselves and (thus) away from the waste paper being treated.

4. Chemical Vapor Treatment and

5. Dry Defibering.

A. G. Dreis and Associates reported the successful deinking of paper and paperboard in the laboratory, using each of the above outlined five approaches. It was found that specific types of waste paper and board were more responsive to certain of these treatment approaches. However, it was found that a combination of cobrasion and dry defibering can be used in all types of waste paper.

In the search for regularly available industrial equipment which would come closest to the action of "crumpling paper by hand and the liberation of separate fibers," it was found that mullers used in the foundry industry for mixing binders and adjusting moisture in molding sands, appeared promising. A side wall muller, equipped with an air circulation system for cooling, manufactured by Beardsley and Piper of Chicago, was used.

A series of trials in a commercial muller unit was conducted and the

Thursday morning speakers: A. P. Allegrini, Minerals & Chemicals Corp. of America; A. C. Schmalz, Hercules Powder Co.; H. E. Corwin, Diamond Gardner Corp., session chairman; and O. P. Fussell, Columbia Boxboard Mills, Inc.

following conclusions reported by this Deinking Conference paper are based on these experiments:

1. A means of dry defibering of waste papers without damage to the fiber and with low total power requirements was found.

2. The major share of the ultimate shrinkage was successfully separated in a dry form.

3. In every case, pressure sensitive tape and other backing material, rubber book backings, hot melt bindings, rubber bands and plastic ring bindings were successfully separated from the reclaimed fiber.

4. Wax was separated from milk cartons to an extent which made the fiber usable in conventional papermaking systems.

5. Conditions were established which would make it possible to design a continuous automatic system for reclaiming usable fiber from almost all types of waste.

6. These conditions were accomplished without steam or chemicals.

7. The reclaimed fiber was obtained in a form which makes it usable for air felted products.

Mr. Dreis reported that a number of patent applications are on file and he predicted that new patent applications in this field can be expected to increase. He predicted that the following areas will receive most attention:

1. Some hydrapulpers will be converted to dry defibering. The necessity for steam, water, settling troughs and thickners will be eliminated.

2. Present thickeners will be adapted for use as fiber collectors in separating dry defibered material from fine particle waste.

3. Development work will be conducted toward securing satisfactory ink exchange materials.

4. Air felted products, based on waste fiber, will be developed and marketed. This may appeal particularly to waste paper collectors who could then install dry deinking systems which would in turn give them the opportunity to stabilize their operations during slack periods. This would also encourage them to take otherwise undesirable waste and impart a degree of upgrading through defibering and dry contaminents removal.

Although the paper on dry deinking was quite sketchy in outlining the exact status of the "art" at this time, it outlined the following process highlights and how the process stands at the present time:

1. Waste paper is added continuously to muller.

2. Moisture is added continuously to muller.

3. Forced air carries fiber and fine particle contaminents continuously from muller.

4. Fiber collector reclaims fiber continuously from air stream.

5. Dust collector separates fine particle contaminents continuously from air stream.

For certain types of waste paper the method developed so far relies entirely on cobrasion and the process is modified from continuous to automatic time-cycled feeding and dumping of the muller. This procedure reportedly works "particularly well" with coated papers. In such a case, most of the coating is blown out of the system, accompanied by the ink adhering to the coating materials. The "stripped" waste paper is then introduced into a conventional paper mill pulping system. Depending on the nature of the waste paper and the desired pulp characteristics, one washing stage is considered desirable. Because no heat, chemicals or grinding action have been applied to pressure sensitive tape, Mr. Dreis points out, this material can be separated effectively from the pulp, using conventional, coarse screening equipment. In the experimental batch, five minutes constituted the cycle for a 400-pound batch, including 60 seconds for dumping and loading. Use of a larger unit would not alter this time cycle, according to the report.

By using the modified procedure outlined above, an abrasive effect can be obtained by feeding abrasive to the muller with the waste paper. Sand, diatomaceous earth and similar materials were suggested. The muller would be dumped onto a coarse screen conveyor and the same procedure can be used for ink exchange materials in place of abrasive materials.

The dry deinking report concluded: "In some cases it might be desirable to treat waste paper with gases of one kind or another. It may also be desirable to control the muller wall temperature. Most striking example of ink exchange obtained to date was with flexographic printed waste where a green dye was removed from the waste paper."

Asphalt Dispersion System

The following are highlights from a paper by O. P. Fussell, Columbia Boxboard Mills, Inc., Chatham, N. Y., who spoke on "Operation of Asphalt Dispersion Systems." The paper dealt with the continuous deasphalting of waste paper used in manufacturing jute test liner board, corrugated medium, light weight chip and boxboard.

The origin of the continuous deasphalting process in the jute test liner and corrugated medium field began in 1949 when the Jute Test Liner Institute financed a project to investigate the possibilities of controlling the asphalt hazard to making a saleable product. N. H. Sandberg, executive vice president of Waldorf Paper Products, is credited with suggesting the use of Asplund Defibrator equipment for this purpose.

Mr. Fussell discussed an installation developed in the St. Paul mill

fiber to which the resin is bonded. repulping unbleached kraft broke, developed but this is reportedly eco-

where various problems of steam pressures, stock handling techniques and continuous dewatering equipment to bring this stock to 30-32 per cent consistency range were worked out. Deckered stock at 8-12 per cent consistency is introduced to this system at a continuous dewatering press. It is then conveyed to a horizontal cooking compartment by screw feeders. The compressed stock in the screw feeder discharge forms a solid plug which prevents steam blow-back as the stock enters the preheater. Steam pressure in the preheater is maintained at 50-70 pounds and higher. This method was in commercial use by 1950 and installation in mills of the jute group increased rapidly. Today there are 35 such installations with 16 C-Disc Refiners, 28 D-Refiners and 85 continuous presses with a daily capacity of over 6,000 tons.

Another equipment manufacturer has a 50 ton per day unit of similar design, according to this report, and another equipment maker has a 25 ton pilot plant in operation. The latter unit uses shredding equipment and air-cleans foreign material before the conventional cooking, dispersing or refining phase.

Mr. Fussell reported on data covering a typical continuous asphalt dispersion system. Here are some highlights:

Power requirements per ton are 35 k.w. Stock temperature during the cooking cycle ranges between 300 and 310°F. Steam consumption per ton averages 1,500 pounds. The systems are usually remotely controlled, resulting in low manpower costs, where one man can handle a 200-600 ton operation.

With such a system, non-fibrous components such as asphalt, wax and resins are completely dispersed to produce a sheet without spots or specks. A by-product advantage is the fact that the stock is sterlized in the 300°F. range. A deodorized sheet is, in effect, produced because volatile contaminents in the stock are vaporized and eliminated due to the rapid release of steam when the stock is discharged. (Odor free stock is a highly desirable product in the food board industry and this is a subject which is receiving attention with increased priority.)

A refiner or disperser, operating under the same steam pressure as the preheater, constitutes the final stage in the cooking cycle. Such a unit discharges stock through one or more restricted orifices to a cyclone where the stock is diluted with white water. Mr. Fussell reported that a continuous deasphalting system as described here preserves sheet strength and improves dewatering on the machine. This results in drying rate increases of 6 to 10 per cent when 100 per cent treated stock is used. Such treated stock shrinks from 1 to 1½ per cent more than untreated stock. Most cylinder machine operations make it a practice to reduce stock temperature in the cyclone or dilution stage to 150° or 140°F. to maintain formation. It is reported that dispersion is not lost by cooling further to 100°F. or even lower. Foam in the vats is minimized because size and similar additives in the stock are eliminated. (As a matter of fact, Mr. Fussell reported that some mills introduce a foam producing chemical to assist in improving formation.)

Maintenance costs with such systems were reported at 15 to 25 cents per ton. There is no fiber loss in this dispersion process and the system is capable of dispersing wet strength paper in normal operation. With regard to the dispersion of plastic materials, it was reported that results vary with normal operation, with some plastics dispersing completely, some partly and some being non-dispersable.

Banquet speaker John Moriarty, A. D. Little, Inc.

W. D. Boggess, chairman of the TAPPI Deinking Committee.

Polyamide Wet Strength Broke

A. C. Schmalz, a member of the Hercules Powder Co. research department in Wilmington, Del., presented a paper "Handling Polyamide-Type Wet Strength Broke." He first reviewed common urea formaldehyde and melamine formaldehyde resin broke reclaiming practices. Paper containing such resins is usually reclaimed in hot water in presence of alum or diluted acids. Generally, at any given temperature and pH, it takes about twice as long to defiber melamine formaldehyde resin broke as it takes to defiber broke containing urea formaldehyde. Time required to repulp such broke is a function of pH and temperature and increasing the temperature and decreasing the pH generally reduces repulping time.

Development of such alkaline-curing wet strength resins as Kymene 557 and 660 created interest because of the advantages to be realized from wet strength treatments under alkaline conditions. Among these are softness, absorbency, strength and reduced down-time due to corrosive action on dryer surfaces and wires. Kymene 557 is a water soluble, strongly cationic resin of moderate molecular weight. It does not contain urea, melamine or formaldehyde.

The diluted resin can be introduced into the paper machine system at any point after major refining. Fan pump addition or a similar convenient location near the wire is recommended. These resins are retained over a 4-10 pH range. No additional additives are required. Addition of 25 p.p.m. sulphate ion is helpful.

Wet strength may be removed or rendered ineffective as follows: (1) by extensive mechanical treatment in refiners, or by (2) loosening and breaking those bonds which hold the resin to the fibers, or (3) by breaking up the resin molecules themselves with or without breaking down the

fiber to which the resin is bonded.

However; elaborated: (1) Additional refining is usually undesirable because increased losses result from excessively short fibers; (2) Loosening the resin-fiber bonds, while highly desirable is still highly theoretical at this time; (3) Chemical reaction with a part of the resin molecule is possible. The ureas and melamines are reworkable at low pH probably because of acid hydrolysis of ureido type groups present in such resins, reducing molecular size sufficiently to destroy wet strength. With polyamide-type resins, not susceptible to acid hydrolysis, alkaline hydrolysis is effective, depending on the concentration of the base used. With these resins it is incidentally more difficult to repulp unbleached kraft than bleached pulps. For the latter the addition of small amounts (2/10 of a per cent or less) of hypochlorite is helpful. Beating time for completely defibering bleached sulphite Kymene 557 broke decreases with decreasing pH. Hydrochloric acid is recommended for lowering pH. When hypochlorite ion is used to assist in repulping unbleached kraft broke, resin breakdown and bleaching occurs. This means that unbleached kraft requires much larger amounts of hypochlorite than bleached broke. (Marked bleaching takes place.)

It is obvious that keeping the temperature down will reduce the bleaching action and this was suggested as a partial aid in overcoming this problem.

Mr. Schmalz summarized as follows: "We feel that substantial progress has been made with the problem of repulping polyamide containing broke and that it is possible to repulp bleached and unbleached polyamide broke with caustic at a pH of about 10. Hypochlorite increases the repulping rate and this depends on hypochlorite ion concentration, pH and temperature. An unfortunate consequence of the hypochlorite treatment when used with unbleached broke is bleaching which essentially uses up the hypochlorite before wet strength breakdown occurs. Cost of such treatment is considerable. Hercules hopes to overcome this difficulty soon.

Dewaxing by Adsorption

A. P. Allegrini and A. W. Claxton, of the Research Division of Minerals and Chemicals Corp. of America, Menlo Park, N. J., presented a paper entitled: "Dewaxing of Waxed Paper Broke by Adsorption." Following are highlights of this paper:

Waxed paper broke is currently discarded or burned because it cannot be reused in the production of paper and board. The presence of even a small quantity of wax (one to two per cent) causes serious problems in the manufacture of paper. Waxed paper broke can be dewaxed by solvent treatment but this is not economical and the solvents are usually poisonous and present a fire hazard. Despite the fact that solvent recovery is theoretically feasible, the recovered wax is not suitable for reuse. A flotation method has also been developed but this is reportedly economically unattractive. Minerals and Chemicals Corp. has developed a process using absorbent clays. This process reclaims a dewaxed fiber suitable for reuse. The process is economical and utilizes conventional equipment.

Based on laboratory findings and pilot plant operation, the company envisions a full scale operation for reclaiming wax paper broke at the rate of 25 tons per day. The wax paper broke is shredded in a conventional knife cutter and then conveyed pneumatically to a surge or storage bin. Granular 30 through 60 mesh adsorbent make-up clay, regenerated clay and possibly partially spent clay is fed at metered rates to a steam tube dryer together with the broke. Such factors as adsorbent clay loading, contact time in the dryer and temperature depend on the nature of the broke and the dewaxing demand.

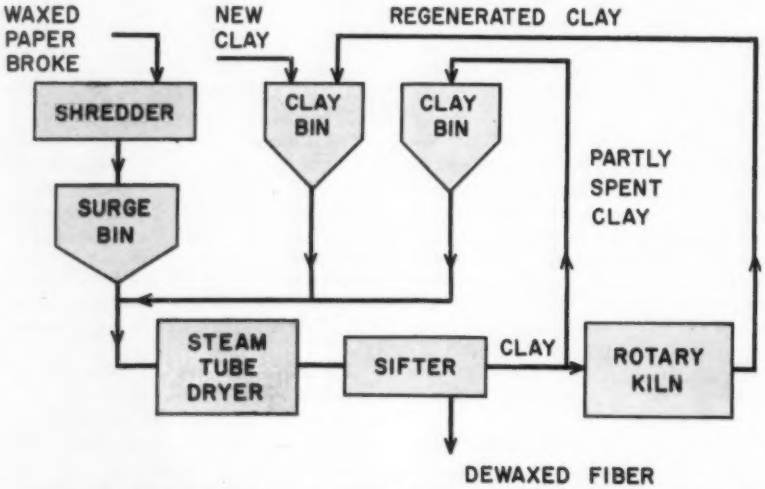
The dryer discharge is screened over a shaking or vibrating sifter to separate the dewaxed fiber from the partially spent clay. A certain portion of the partially spent clay is then recycled and the remainder is regenerated in a direct-fired rotary kiln.

The estimated operating, equipment and installation cost for the reclamation of 25 tons per day of fiber from a wax paper broke containing 29 to 30 per cent of removable organic material are as follows: Direct operating costs, excluding initial clay inventory, overhead, amortization, depreciation and taxes were estimated at $8.50 per ton of reclaimed fiber. Capital investment was estimated at $190,000. Approximately 48,000 pounds of clay delivered at $1,440 would be needed for the initial clay charge. Daily clay requirements to compensate for the clay losses were estimated at slightly over 1000 pounds.

A patent application for this process has been filed.

The paper discussed dewaxing waxed paper broke with adsorbent clays such as Attapulgus clay. The laboratory work was conducted with a small hollow steel cylinder equipped with lifting flights, revolving about a horizontal axis at 10 r.p.m., heated externally with natural gas. The clay-wax paper broke mixture was charged to the cylinder and heat was applied for various time intervals.

In the pilot plant work, the dewaxing was carried out in a one foot diameter by eight foot long continuous steam rotary dryer. The dryer was equipped with a revolving shell with a bundle of steam tubes. These extended the full length of the shell in two concentric rows.



Minerals and Chemicals Corp. proposes to reclaim waxed paper broke with adsorbent clay in a 25-ton per day plant with this type of operation.

deinked pulp flows either directly to

Deinking costs per ton at Manisti-

per cent caustic, at 5 per cent con-

Friday morning panel members: F. S. Hoholik, Manistique Pulp & Paper Co.; M. Davis, Adell Chemical Co.; J. W. Wendell, Jr., Tileston and Hollingsworth Co., conference chairman; J. Radley, Falulah Paper Co.; and E. F. Andrews, International Paper Co.

Coated Magazine Deinking

E. F. Andrews, of International Paper Co., Niagara Falls, N. Y., led off as first panelist in the panel discussion devoted to "Deinking of High Groundwood Stock." It was indicated that his mill confines its deinking activity exclusively to magazine stock, having given up the use of ledger grades some time ago because of the well-known and much discussed objectionable plastic and adhesive materials often found in this type of waste paper. Nor does it deink press room waste.

Mr. Andrews reported on the trend of increasing the groundwood content in magazine stock by noting that 15 years ago, the average content was 10 to 15 per cent. Ten years ago, average G.W. content had risen to 20 per cent and this same figure currently stands at approximately 35 per cent.

Increasing groundwood content has had a number of important effects on deinking generally. Chlorine usage, based on 100 per cent sulphite furnished originally, had risen to 120 per cent fifteen years ago (due to groundwood content) to 135 per cent ten years ago and presently stands at 150 per cent. The need for such increased chlorination has meant the addition of a second vaporizer and the use of acidified bleach liquor at the Niagara Falls mill, steps which do, of course, affect the economics of deinking.

Mr. Andrews indicated that the steadily increasing groundwood content can be coped with by the use of more chlorine but that the higher groundwood content (and, at the same time, greater coating weights of magazine grades) tend to reduce yield which could eventually make magazine stock deinking economically unfeasible. With regard to pulp characteristics, it has been found that tearing strength of deinked stocks using magazine waste paper only, has held its own (and has even increased) mainly because increased usage of kraft in magazine stock has more than offset the increased use of low strength groundwood.

A number of well known magazines were classified according to groundwood content: Saturday Evening Post and Fortune contain relatively less groundwood. Medium content groundwood was reported in Life, Esquire, Liberty and catalogs. Western magazines, comic books and newsprint were classified as high content groundwood stock.

Mr. Andrews submitted the following table of data, for popular and high volume magazine grades:

DEINKING DIFFERENT MAGAZINES

Magazine	Ash	Brightness (140% Chlorine)	Per Cent Yield	Estimated Production Cost
Saturday Evening Post	20.4	77.3	55.2	$117
Fortune	17.9	76.2	37.3	174
Life	22.6	67.5	54.7	129
Esquire	12.6	51.8	36.4	183
Liberty	17.9	49.9	31.9	211
Catalogs	14.8	49.8	33.2	203
Western Mags	1.9	37.3	28.6	136
Newsprint	0.8	—	35.8	92

Denver Flotation Process

F. S. Hoholik, Manistique Pulp & Paper Co., Manistique, Mich., described a Denver flotation process installation at Manistique.

At the present time, the paper flotation plant with a capacity of approximately 50 tons per day operates satisfactorily on groundwood shavings and fly leaf. Total recovery cost of this waste paper is equal to or slightly lower than the cost of manufacturing virgin groundwood and this has in turn resulted in reduced chemical fiber cost and increased groundwood capacity and potential speedup of the paper machine.

The Denver flotation process is not new. It was developed by the mining industry for metal separation and recovery many years ago. In mining applications, the ores are ground to a fine powder, diluted with water to low consistency and passed through a series of flotation cells. Each cell is equipped with an impeller type agitator through which air is introduced to create froth. Detergents and other chemicals with an affinity for a specific metal are also added. The minute air bubbles surround the "desired" metal and thus float it to the surface.

The metal is then removed with the froth, somewhat similar to action in the Sveen-Pedersen saveall familiar to the paper industry. The recovered metal is then washed from the froth.

The paper flotation process is somewhat in reverse to the above. Froth producing (and other) chemicals are added to the cells. With an affinity for color and metallic inks they are then floated up, skimmed off and sewered, leaving only the fibers and filler clays.

The Manistique system consists of a 2000-pound Jones Pulpmaster for repulping waste paper received in bales ranging from 800 pounds to 1000 pounds. The repulped stock is diluted from a consistency of about 6 per cent to 1 per cent with white water, coarse-screened through a small Jonssen screen and distributed to three sets, each consisting of eight flotation cells from which the

deinked pulp flows either directly to the groundwood bull screens or alternatively over a small decker and from there to the bull screens. The alternate arrangement is used when bulky papers are manufactured on the paper machine in which case all deckered white water, consisting mostly of filler clay, is sewered.

The stock accepted at the bull screens is pumped to three senior Trimbey screens and here rejects are passed through a quiller screen. The Trimbey and quiller accepts are deckered and delivered to the beater room. (Quiller rejects are refined by a Sprout Waldron single-disc refiner and returned to bull screens.)

Deinking costs per ton at Manistique are as follows: Chemicals—(soda ash, sodium silicate, tripolyphosphate, soap beads, tergitol, pine oil, kerosene), $1.10; steam: $2.28; Electric power, $4.35; repair material, $0.38; labor and supervision, $4.26. Total cost: $12.47.

Mr. Hoholik observed that: "The most significant benefit derived from the Denver flotation process is the conservation of fines which are most desirable in manufacturing present day news and light weight papers. Filler clay is also available if desired. Bleaching after flotation by several processes is being investigated."

Surface Active Agents in Deinking

M. Davis of Adell Chemical Co., Holyoke, Mass., was the fourth panel speaker with his paper: "Surface Active Agents in Groundwood Deinking." Here are highlights from his remarks.

Non-ionic detergents are considered ideally suited to the necessary conditions of using surface active agents in deinking processes. These detergents have the following most important properties: (1) Excellent compatibility with anionics and cationics. (They do not form insoluble metal salts.) (2) The ether linkage insures excellent stability in either acid or alkali mediums. They also show stability with oxidizing agents such as peroxide, hypochlorite and perborate. (3) They demonstrate good heat stability which is an important factor under many conditions.

Mr. Davis reported that his firm's laboratory is presently "programming a series of experiments in an effort to develop formulations which may be of value in deinking waste paper with high groundwood content at appreciably lower temperatures and shorter cooking time." From the standpoint of emulsification, improved performance from a blend of nonionics has been noted.

Falulah's Deinking System

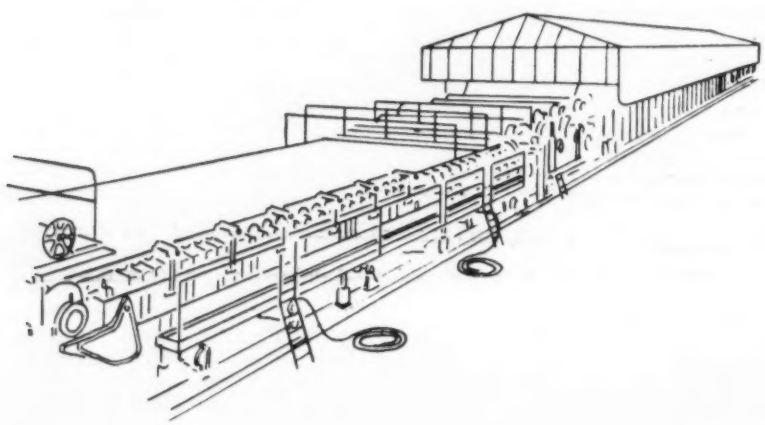
J. Radley, Falulah Paper Co., Fitchburg, Mass., described their deinking system. Falulah deinks approximately 30 tons of waste paper per day. Stock used is hand-sorted mixed magazines and book; 100% groundwood content magazines are discarded. Falulah does not deink Life magazine because of its high ink coverage and poor fiber yield. The deinked stock is used to make a lined cylinder machine sheet which is subsequently coated off-the-machine.

A Cowles pulper is charged with 2,550 pounds of magazine stock, 5 per cent caustic, at 5 per cent consistency. The cooking cycle is 20 to 25 minutes at 190 to 200°F. Two pulper loads are discharged into one cooking chest where the temperature is maintained at 190 to 200° for approximately one hour. From the cooking tests the stock is pumped to the Jonsson screens after diluting to about 2 per cent consistency. Before reaching the Jonsson screens, the stock is passed over a magnetic drum for clip and other metal parts removal. From the Jonsson screens the stock is pumped to a battery of 12-inch Cycleans. Rejects are sewered and because the losses in this installation are high, Fitchburg plans to pass the rejects through a seven-inch Cyclean for further fiber reclamation.

After this centrifugal cleaning, the stock is passed to two-three stage counter current Lancaster washers. The effluent from the first stage washer flows to a Hardinge filtration plant from which the sludge is trucked to the city dump. Cleaned stock flows into a storage chest where it is retained until it is needed at the paper machine. The stock is subjected to no further treatment except for some slight refining as it passes through the paper machine's jordans.

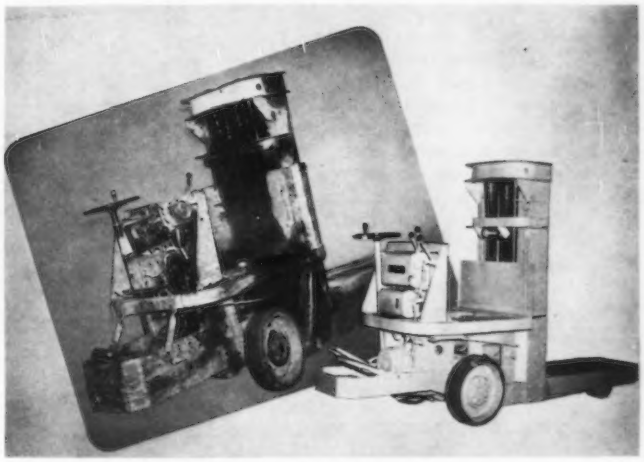
The Falulah deinking system yields approximately 800 to 1200 pounds of finished fiber per ton of book furnished to the pulpers. After deinking, the stock contains 30 to 40 per cent of groundwood and ash of 1.5 to 2.0 per cent. pH is 7.0 to 7.1 and brightness ranges between 50 and 56.

Falulah's chief problems encountered in this deinking plant are the following: (1) Poor fiber yield and discoloration due to groundwood; (2) Tacky and rubbery adhesives which the system does not remove; (3) A large number of very fine ink particles which remain in the cleaned stock.



How to Decide When to Rebuild and When to Replace an Industrial Truck

There are no pat rules to answer the above questions but the author does present an approach to making these decisions.



John A. Draxler,
Chief Engineer,
The Elwell-Parker Electric Co.

To avoid excessive industrial truck operating and maintenance costs, caused by wear and obsolescence, a great many users are searching for a method of determining just when to update their truck fleet. Once the decision to make such improvements has been made the user is then faced with the problem of deciding whether to rebuild existing trucks or to buy new models. With the current squeeze on profits, the necessity to reach an intelligent decision on both questions has never been more pressing.

For the purposes of this article, we define rebuilding as a complete factory overhaul or equivalent. Such a job carries a new truck guarantee when completed, and includes replacement of all bearings, bushings, gears, steering linkage and other wearing parts. Where necessary, replacement of castings, housings, and major frame members are undertaken and where applicable recent modifications and improvements such as increased speeds, new safety devices, more durable materials and the like are likewise included. Although the term "Factory Overhaul" is not meant to imply that a job of similar quality cannot be performed by the plant's own maintenance department or a qualified outside contractor, experience indicates that the original manufacturer can do the job at lower cost and in far less time.

Contrary to the desires of most users, there are no pat rules for resolving the problem. Although some have attempted to establish rules that call for automatic replacement in five, seven or ten years, such rules ignore many of the factors which affect truck maintenance costs and service life. Basic among these are the following:

1. **Truck Usage**—The total number of hours a truck is worked. A truck that is actually in operation only three or four hours per day obviously will not require replacement as quickly, in terms of calendar years, as one which operates 24 hours per day.

2. **Operating Conditions**—Truck working in a clean warehouse, handling standard loads well within the capacity of the truck, will hold up longer than trucks operating, for example, in a foundry, handling frequent overloads. Other operating conditions falling within these extremes will also bear directly on the replacement interval. Thus, each individual plant must consider the severity of its own operating conditions in deciding when to replace or rebuild.

3. **Atmospheric Conditions**—Sometimes overlooked, but nonetheless important, are the conditions of dust, moisture, salt, corrosive chemicals, etc., that may be present. For example, foundry sand is tough on bearings, moisture in a packing house rusts parts and makes lubrication difficult. A gypsum plant is faced with a severe dust problem with superfine, abrasive dust permeating the atmosphere and working its way into moving parts. Trucks operating under such trying conditions will naturally experience accelerated wear and reduced truck life.

4. **Preventive Maintenance**—Perhaps most important of all, is the factor of preventive maintenance. A carefully planned and executed preventive maintenance program can often double or triple the life of a truck. Thus, plants with relatively poor maintenance can expect shorter service life than plants with good maintenance programs. The economic value of spending for maintenance has, of course, been demonstrated many times.

5. **Obsolescence**—Completely apart from the question of wear and tear, is the factor of obsolescence. That is, whether a truck is able to do its job efficiently. Plant conditions, size of load, handling methods, etc., may have changed since the original purchase of the truck. In this case, the truck may no longer operate efficiently, and thus have reached the end of its useful service although it may still be in good physical condition. Such a situation,

however, develops fairly infrequently, simply because plant conditions do not change very rapidly and generally trucks wear out before operating conditions demand their replacement.

Key Factor: Operating Costs

With the exception of the last item, all tend to reflect themselves in terms of truck operating costs. Hence, by studying these costs over a period of time, it is possible to determine, with a reasonable degree of accuracy, when a particular truck should be rebuilt or replaced.

Because a large portion of the decision to rebuild or replace is based on day-to-day operating costs, it is first essential to have accurate maintenance records available. Although such records may entail a fair amount of bookkeeping, the facts which such figures can disclose, far offset an inconvenience. There have been a great many articles and pamphlets prepared on the subject of industrial truck maintenance and accompanying record-keeping systems* and we will not go into the subject.

Assuming that accurate records are available, it is a simple matter to plot the annual maintenance costs, and from these develop a curve showing the pattern of increasing costs as a truck gets older. Figure 1 shows the typical cost curve of a 4,000-pound capacity electric-powered fork truck. Since it is based on the average of several actual cases, the curve can be considered typical of the pattern normally encountered when a truck is operated on a single, eight-hour shift under average plant conditions.

During the first year, the curve shows that maintenance costs ran slightly more than $150. This reflects the cost of such items as new tires, contact tips, cylinder packing and other expendable items as well as the normal cost of labor and materials involved in preventive maintenance.

After the first year, the costs begin to rise at a gradual rate for the next several years reflecting normal aging of the truck. However, in the eighth, ninth and tenth years, the cost curve begins to take a more definite upswing. Here, major items such as bearings, gears, cylinder, etc. are being replaced. This change in the slope of the curve is a tip-off to an alert truck user that ensuing years will bring even greater maintenance cost increases.

Past History Gives Answer

Now comes the point when you begin to wonder if it is economical

*See Elwell-Parker folder "The Lift" on Preventive Maintenance.

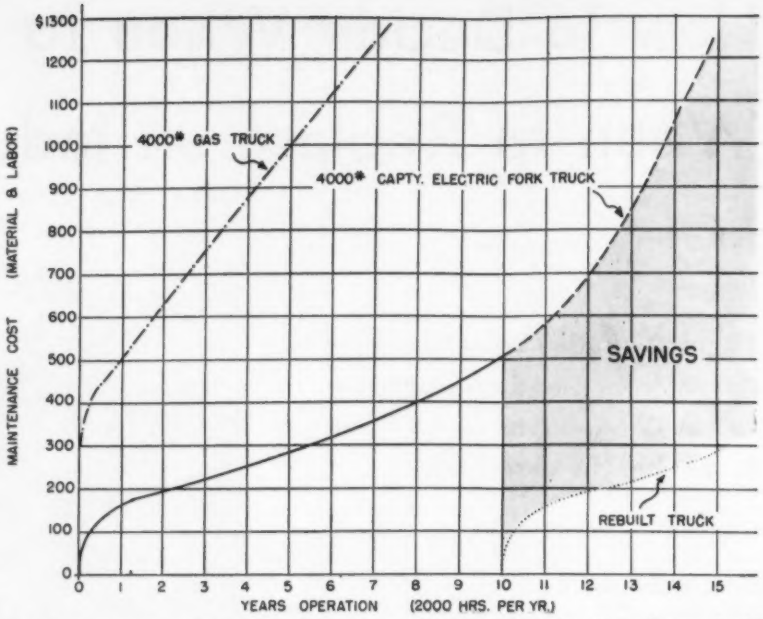


Figure 1. Typical maintenance cost curves of 4000 lb. trucks. Note how rebuild reduces cost of electric fork truck.

to continue operating these trucks. No one can predict with absolute certainty, what will happen in the future, but if you have been plotting your cost accurately, for a period of years, its possible to make a reasonable projection.

Although the average manufacturer would have to make a projection for the purpose of this story, actual figures can be used because they are available from a number of jobs. In any event the curve represented by the dotted line in Figure 1 illustrates what happens after the 10th year. Note that by the 15th year the cost of maintaining the truck reaches $1,400 and is continuing to climb.

When to Rebuild

Assuming that the user in question is operating a well-organized truck rebuilding program, how does he determine whether a truck is due for rebuilding. A rule of thumb has been developed which says: when the cost of rebuilding can be returned by savings in maintenance cost in a period of not more than five years, the action is justified. Thus, the decision becomes a fairly simple mathematics problem. The maintenance cost savings is represented by the difference between the anticipated cost of maintaining the original trucks and the estimated cost of maintaining the rebuilt truck. This latter figure can be assumed to be the same as the truck's original cost during the first five years of its operation (as indicated by the dashed line). The area between the two curves represents the savings. Tabulated on a yearly basis, the savings are given in Table I.

With a 4,000-pound capacity fork truck costing in the neighborhood of $7,000, and the cost of truck rebuilding about half the original truck cost, it is clear that rebuilding would prove economical in this case.

These are two additional comments in connection with this cost procedure. First, many people may feel that five years is too long a period in which to recover the cost of rebuilding. However, it should be remembered that most companies do not consider rebuilding a capital investment and hence the rules that

(Continued on page 40)

TABLE I
ANTICIPATED MAINTENANCE COST

Year	Original Truck	Rebuilt Truck	Difference
11th	$ 600.00	$150.00	$ 450.00
12th	700.00	200.00	500.00
13th	850.00	225.00	625.00
14th	1,100.00	250.00	850.00
15th	1,400.00	275.00	1,125.00
		Total 5-year savings	$3,550.00

Quality

everyone's problem!

Cleanliness, levelness of sheet and uniformity are paramount in producing paper suitable for today's high speed presses and converting machines.

Bauer Centri-Cleaners produce results your customers will notice, and like, immediately. Their unequalled efficiency removes light wood dirt, specks, shives and fine grit before the stock is delivered to the headbox.

Quality need not be a problem . . . just ask your Bauer representative for details, or write for Bulletin P-18A.

Bauer
CENTRI-CLEANERS For Paper and Board Machines

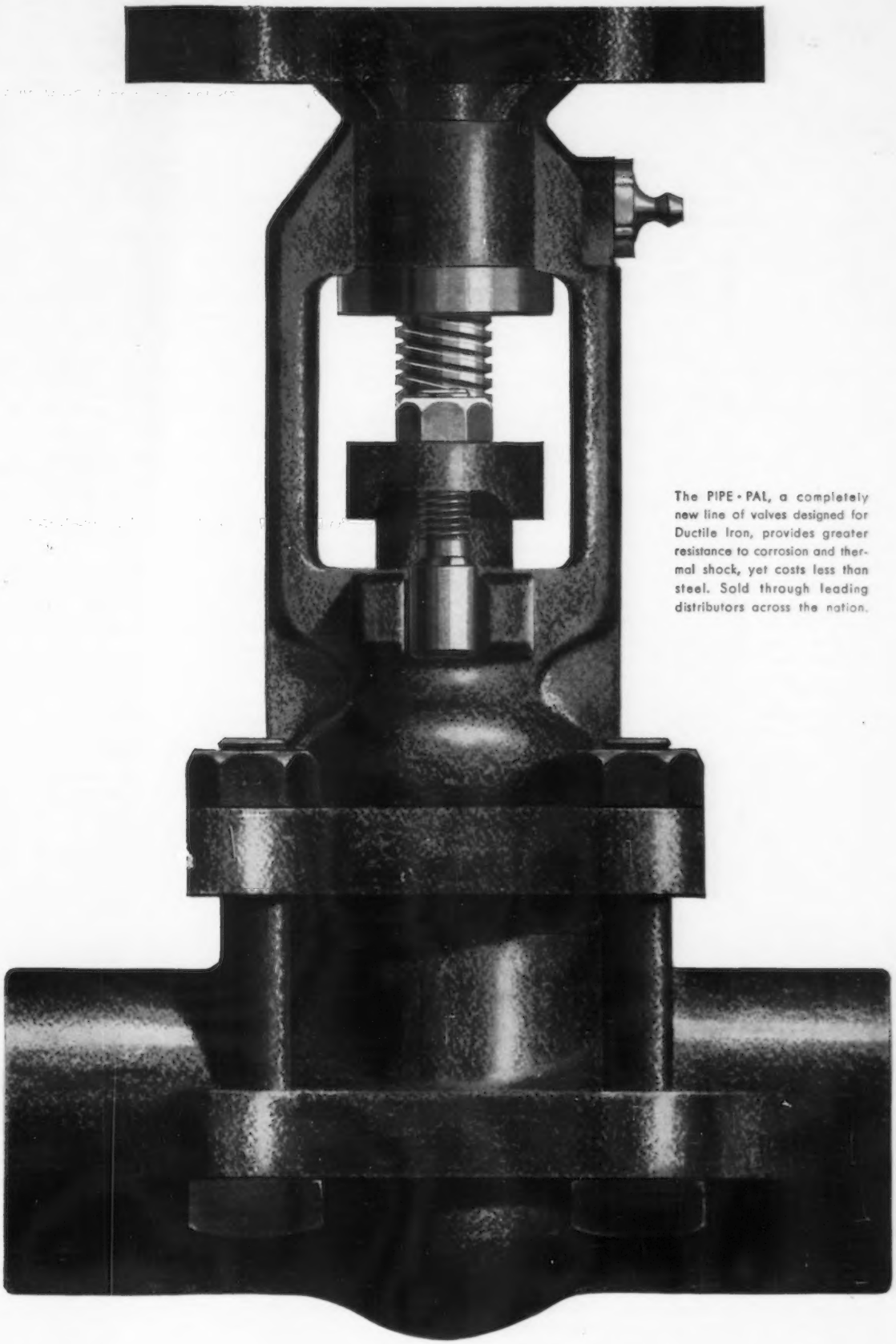
THE BAUER BROS. CO.
1758 Sheridan Avenue • Springfield, Ohio

DYNAMIC Sometimes you can capture the mood of a company in one word. That's the way it is these days at OIC. The vigor of a new team determined to deliver a new high standard of value to valve users . . . men who know what the cost-conscious valve buyer or specifier needs . . . the excitement of new ideas and new products tailored to *your* needs . . . the deep satisfaction of hearing distributors and customers say: "Now you're talking *our* language." Interesting things are happening in the valve business . . . things that go far beyond past concepts of quality and service. When can we tell you about them?

OIC VALVES | FORGED AND CAST STEEL, BRONZE, IRON AND DUCTILE IRON VALVES

THE OHIO INJECTOR COMPANY • WADSWORTH, OHIO

turer could be expected to offer as-



The PIPE • PAL, a completely new line of valves designed for Ductile Iron, provides greater resistance to corrosion and thermal shock, yet costs less than steel. Sold through leading distributors across the nation.

...When to Replace an Industrial Truck

(Continued from page 36)

apply to capital investment would not apply on rebuilding. Second, the truck used in the preceding example was operated on a single shift basis. Where trucks are operated on a two- or three-shift basis, the time in which the cost of rebuilding could be recovered, would be substantially less in terms of calendar years since it is generally assumed that a truck will wear out in approximately the same number of hours whether it is working one or three shifts.

Other Important Factors

Although cost factors are essential considerations in deciding when to rebuild, there are other important factors which must be weighed. The most important of these is dependability. An industrial truck is purchased to do a job. It is expected to be available whenever work is to be done. As trucks get older, their dependability declines, and although replacement may not be completely justified on a cost basis, lack of dependability may necessitate replacement or rebuilding. In a large fleet operation, dependability may not be quite so important as in a single truck operation because there are usually spare trucks available to fill in. But where small groups of trucks or a single truck is involved, dependability becomes a major consideration. Each user, however, must weigh the importance of dependability in terms of his own operation.

Although downtime may constitute a definite inconvenience, it also affects the overall cost of material handling. The maintenance costs used in the preceding example included only the labor and materials directly spent in keeping the truck in operation. A more accurate cost estimate would be obtained if such indirect costs as amortization of investment, production loss due to downtime, wages of operators made non-productive while the truck is out of service insurance, etc. were included. These cost factors are difficult, if not impossible, to estimate, but undoubtedly range from $10 to over $100 per hour, depending on the type of handling operation. If it were possible to include these costs, the return on a truck rebuilding investment would be far greater than the estimate indicates.

To Buy or Rebuild?

Up to this point, we have dealt mainly with the economics of truck rebuilding. Much the same procedure should be used in deciding when and if a truck should be replaced with a new model. The major incentive to rebuild a truck is cost. Even the most extensive factory overhaul will provide a like-new truck with all up-to-date modifications at 40 to 50 percent of the cost of a new model. Cost alone, however, is not the only point to consider because other factors may modify or even eliminate the cost advantages of rebuilding.

There are the factors that a truck user should consider when deciding whether replacement or rebuilding is the most advantageous means of reducing maintenance costs:

1. Production Requirements—As previously discussed, handling conditions within the plant may have changed sufficiently to warrant a new truck of a different type or capacity. On the other hand, if plant conditions are unchanged, the old truck can be expected to perform efficiently once they are rebuilt.

2. Availability Of Replacement Parts—As a truck gets older, it becomes more difficult to obtain repair parts. This is particularly true with gas-powered trucks whose shorter service life means that parts are not kept available in stock for so many years. If parts are difficult or costly to obtain, the job of rebuilding may be affected and future requirements, once the truck is back in operation, may involve delays while parts are located. The original truck manufacturer could be expected to offer assistance in deciding this question.

"This has gone far enough—I see nothing but pulp and paper all day!"

3. New Truck Availability—Many older trucks are no longer in production. Thus, it may prove costly to find duplicates of original trucks. Likewise, if the older trucks were built to solve a special need, the user may find it advantageous to rebuild, rather than to buy new models that will not do the job so well.

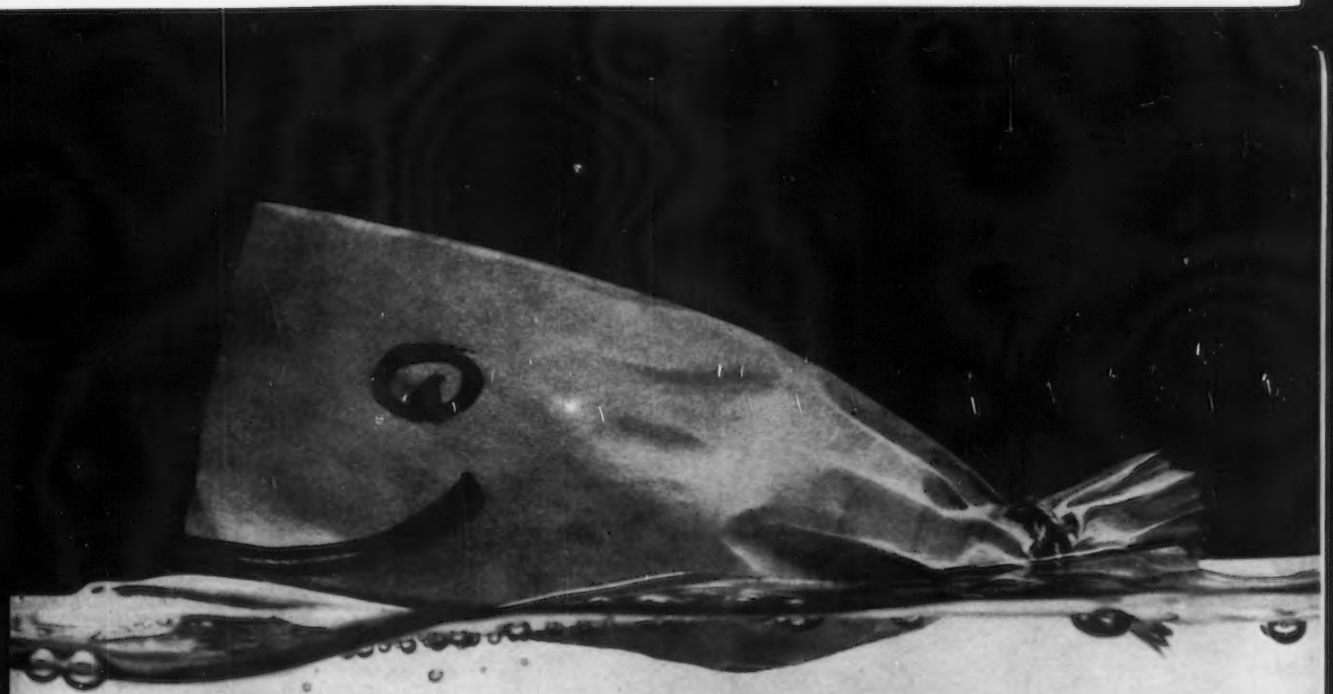
4. Fleet Operation—Where several trucks of the same type are being operated in a plant, there is a definite advantage from the standpoint of repair experience and stocking of repair parts if the fleet can be kept uniform. Thus, rebuilding will offer the advantage of reducing replacement parts stock and permitting interchangeability of parts and subassemblies.

5. Taxes—There is no certainty as to the handling of truck rebuilding costs as far as Federal taxes are concerned, and each firm should act on the advice of its legal and accounting counsel. However, there are numerous cases where it has been possible to treat the cost of rebuilding as an expense rather than as a capital investment with a resultant tax saving.

At this point, it should be made perfectly clear that tangible costs are not the only factors to consider when deciding whether to buy new or rebuild. Because rebuilding costs substantially less than purchase of a new truck, it may appear to the casual observer that rebuilding is the best answer. It is essential, however, that plant management give careful consideration to the intangible factors that affect this decision. The cost of these intangible factors, while not so clearly defined, can make a major difference in the total cost of the handling program. If a new truck will provide better handling economy through faster speeds, greater flexibility or improve operator convenience and safety then, by all means, the purchase of a new truck is a more economical step.

If plant handling techniques have changed, of if spare parts are difficult to obtain, then the purchase of a new truck is strongly recommended.

Today, many progressive companies are compromising on the situation. They rebuild their trucks once, then buy new models the following rebuilding. This procedure permits taking advantage of the economies of a rebuilding job, yet permits periodic updating of fleets to take advantage of new developments in truck design and to meet gradual changes in plant handling needs.



this paper was treated with

SCRIPTITE* 33

A melamine resin supplied as a finely divided dry powder, Scriptite 33 imparts high wet strength to many paper products. Count on Scriptite 33 to increase dry tensile strength and wet rub resistance . . . to improve dry Mullen, wax pick, internal size efficiency, and dry stiffness. Scriptite 33 produces papers with strong fold endurance. For laboratory samples of Scriptite 33 and technical bulletin, write Monsanto Chemical Company, Plastics Division, Room 1071 Springfield 2, Mass.

Monsanto

*SCRIPTITE: Reg. U.S. Pat. Off.

The Monsanto line of paper resins also includes

SCRIPTITE 40 . . . *a urea type wet-strength resin.*

SCRIPTITE 50 . . . *for unsurpassed printability and improved surface characteristics on boxboard.*

SCRIPTITE 52 . . . *in combination with formaldehyde to give water resistance to folding boxboard and to jute liner.*

SCRIPTITE 54 . . . *for outstanding water resistance and both wet and dry rub resistance.*

You get something extra with Wyandotte Chlorine

...a guarantee of satisfaction goes with every sale

The guarantee you get with Wyandotte Chlorine is possible for just one reason: We're mighty hard to please ourselves!

Our chlorine is pampered every step of the way; it is rigidly controlled from basic materials to finished product delivered to your plant; and it is backed by the skilled technical service that is an integral part of the Wyandotte way of doing business.

You'll like doing business with Wyandotte, and we'd like to serve you. Contact us now. *Wyandotte Chemicals Corporation, Dept. 762-J, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte CHEMICALS

MICHIGAN ALKALI DIVISION

PACING PROGRESS WITH CREATIVE CHEMISTRY

PJT NEW LITERATURE

Rayonier Offers New Safety Booklet On Baling Wire

Baling wire, often a source of ugly accidents, need no longer be the hazardous operation it has been. So states a new safety booklet published by Rayonier and offered free of charge.

Because it annually ships hundreds of thousands of tons of baled pulps to a variety of industries, Rayonier has accumulated a great deal of information on the dangers involved. The 8½-inch by 11-inch booklet, profusely illustrated with on-the-job photographs, shows the step-by-step way to prevent accidents and their resultant costs in the handling of wire-baled packagings.

Included with the booklet is a smaller handbook on basic safety tips for cutting wire on pulp bales. Also illustrated, it is primarily designed for workers in shipping, receiving and manufacturing departments. Both booklets were prepared by Rayonier's safety department under the direction of Robert M. Gilmore, the company safety director.

Copies are available on a first-come, first-served basis as long as the supply lasts. Write on company letterhead to Rayonier Incorporated, sales department, 161 East 42nd Street, New York 17, N. Y.

Gyro-integrating Mass Flowmeter

Describes theory, operation and advantages of this flowmeter which measures flow of fuels, industrial liquids, and gases directly in pounds. Cutaway drawings illustrate principle of operation. Bulletin GEA-6925. General Electric Co., Schenectady 5, N. Y.

Economy Stock Valves

Contains illustrated copy on knife gate bonnetless type stock valves. Brochure. Economy Equipment Co., 4800 S. Hoyne Ave., Chicago 9, Ill.

Lorain Moto-Crane Model MC-218

Describes this 18-ton model which includes 6x4 carrier with two position turntable mounting, hydraulic power steering, power brakes, integrally welded outrigger boxes. Bulletin. Thew Shovel Co., Adv. Dept., Lorain, Ohio.

this will be the largest convention of its kind in the industry. While over

Sewage Surge Relief Valves

Shows how this valve gives full pipe flow with minimum interference as there are no small parts to clog and only one moving part, a large rubber faced disk, to contact the flow. Bulletin SEW-1. Golden-Anderson Valve Specialty Co., 1228 Ridge Ave., Pittsburgh 33, Pa.

Wire Stitching

Shows typical application on all types of box stitching, bagging, carding, labeling, book stitching and metal stitching. Also gives complete information on accessory equipment and stitching wire. Catalog. Acme Steel Co., 135th St. & Perry Ave., Chicago 27, Ill.

Panellit Construction Services

Illustrates and describes its complete installation through start-up service for automation and instrumentation systems. Bulletin 107. Panellit Service Corp., 7401 N. Hamlin Ave., Skokie, Ill.

Recirculated Gas and Gas Tempering

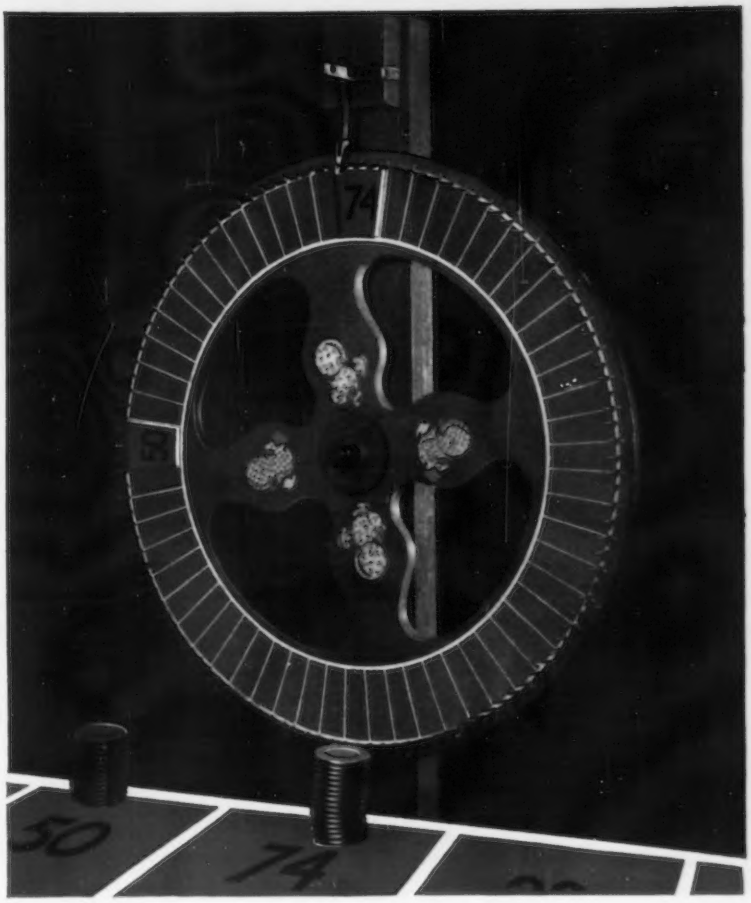
Discusses the proper proportion of heat between evaporating and superheating surfaces in boiler design. Bulletin G-96. Babcock & Wilcox Co., Boiler Div., Barberton, Ohio.

Don't Stretch Your Imagination

Outlines the general story of Clupak which introduces a new element to paper. Folder. Clupak, Inc., 530 Fifth Ave., New York 36, N. Y.

Electric Indicators and Controllers

Discusses typical measurement applications, principles of operation, control forms, specifications and scale ranges available. Bulletin GEZ-2898. General Electric Co., Schenectady 5, N. Y.



What's your lucky number in liquid caustic?

...let Wyandotte help you choose between 50% and 74% grades

Finding the liquid caustic that fits your needs is not a matter of luck when you work with Wyandotte. For, through a systematic analysis of freight rates, consumption figures, and conversion costs, your Wyandotte technical-service man can help you determine whether you'll profit by switching to 74% caustic . . . and if so, how much you can expect to save.

It's wise to check your requirements periodically. For basic information on all types of caustic, write today for our free 56-page book, "Caustic Soda." *Wyandotte Chemicals Corporation, Dept. 762-J, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte CHEMICALS
MICHIGAN ALKALI DIVISION

PACING PROGRESS WITH CREATIVE CHEMISTRY

PTJ NEWS OF CONVERTERS

A. R. Dragone

J. G. Morris, Jr.

Vaculite Reassigns Personnel

Personnel changes at the Vaculite Corp., Hamilton, Ohio, have been announced following completion of the firm's move to Hamilton from Cambridge, Mass., and establishment of production schedules. Vaculite is owned jointly by the National Research Corp., Cambridge, and The Champion Paper and Fibre Co.

Allan R. Dragone, in addition to remaining as vice president of Vaculite, has become product manager for metalized products in Champion's printing papers sales division.

Joseph G. Morris, Jr., formerly assistant to Champion's president on product development matters, has been named general manager of Vaculite. He takes over these duties from Charles G. Ellington, Jr., who has transferred to Champion's converting products group as director of planning.

Mr. Dragone was born in Melrose, Mass., and is a World War II Navy veteran. A graduate of Middlebury College and the Harvard Graduate School of Business Administration, he worked for the Carborundum Co., Niagara Falls, N. Y., and the National Research Corp. before transferring from N.R.C. to Vaculite last year.

Mr. Morris has managed several of Champion's Ohio Division operations. Born in Cincinnati, he is a graduate of the University of Cincinnati and served as an artillery officer in the U. S. Army during World War II.

Vaculite is producing highly reflectant paper by a vacuum process which deposits a thin coat of metal directly on paper for use in the packaging and insulation fields as well as other areas.

Dalsheimer Leaving Lord Baltimore Press

The retirement of Hugo Dalsheimer as chairman of the board of the Lord Baltimore Press was announced by Leonard Dalsheimer, president and chief executive officer of the company.

Mr. Dalsheimer was president of the company for ten years prior to March 1958, at which time he was elected chairman. He is leaving the Lord Baltimore Press after 50 years of service, having started as an apprentice.

Photo-Lithographers Plan Convention in November

More than 2,000 guests will be registered for the largest lithographing convention ever held in this country when the 27th Annual Convention and Exhibit of the National Ass'n of Photo-Lithographers opens in Kansas City, Mo., on Wednesday, November 18, and continues through Saturday, November 21.

According to Walter E. Soderstrom, executive vice president of the association, the advance room registration seems to indicate that this will be the largest convention of its kind in the industry. While over 1,000 executives and craftsmen, representing every branch of management and production, are attending the sessions covering all phases of the industry, hundreds of others will be witnessing the exhibits of 105 of the foremost equipment manufacturers and suppliers.

Tab Card Ass'n. To Stress Service

Improved service to the public, promotion of tabulating card usage, and dissemination of data—these are aims of the Tabulating Card Manufacturers Ass'n., a recently formed group of tab card makers from all over the United States.

"Tabulating cards are big business today, and getting bigger," says Simon Gaynor, president of the T.C.M.A. "They are the building blocks of business expansion as well as silent, infallibe sentinels of cost reduction and inventory control."

T.C.M.A. was formed in May 1959 and already includes over one-third of America's tabulating card manufacturers. The TCMA has diversified aims, including:

1. Constant improvement of service to the public;
2. Promotion of the general welfare of the Tabulating Card Industry;
3. Compilation and dissemination of data illustrating general business conditions in the industry;
4. Encouragement and maintenance of sound, ethical business practices in the industry.

Improved service, as interpreted by the T.C.M.A. membership, will include many things, from education on tab card usage to active promotion of tab card utilization in smaller businesses. Emphasis will be on tab card design.

"In the past few years the tabulating card industry has come of age," says Carroll Greathouse, executive secretary. "By proving its ability to increase labor efficiency, reduce costs, speed compilation of essential data, and further the modern principle of unit control, the tabulating card has won the distinction of being a basic necessity in any efficient business.

"There is still a great deal of work to be done, however," he says, "and the T.C.M.A. will be a tremendous asset to this industry-wide market expansion program."

In the field of accounting, the association intends to bring to the attention of industry leaders the dangers of inflexible non-tab systems which cannot be adapted to the every-

day progress of modern business ac-

FIRST OFFSHORE SULPHUR MINE WILL TAP ONE OF THE WORLD'S LARGEST DEPOSITS

Freeport's Grand Isle project—seven miles off the coast of Louisiana in 50 feet of water—is unique; it incorporates many firsts and it represents pioneering in the true sense. Its real import, however, is that it extends far into the future the available reserves of low-priced Frasch sulphur. At present, sulphur is in good supply. But, since reserves cannot be found at will nor mines turned on like faucets, we must develop sufficient productive capacity well in advance to meet the much greater demand for sulphur anticipated in the coming years. Our reserves are the highest in our forty-seven-year history—certainly an assurance to our customers of an unfailing supply for their long-term needs.

FREEPORT SULPHUR COMPANY

161 East 42nd Street, New York 17, New York

day progress of modern business accounting, a field in which tab cards are particularly effective by virtue of their nearly unlimited flexibility.

In addition, the T.C.M.A. intends to foster and disseminate throughout the membership technical advances in tab card systems. For instance, a T.C.M.A. member recently introduced a series of multi-colored tab cards printed on both sides, in sizes ranging up to 14¾ inches long.

"Despite its tremendous advances in the first 70 years the tabulating card industry is still on the threshold of its true possibilities," Mr. Greathouse says, "In the next decade we expect the industry to triple—or even quadruple—as more and more businessmen take advantage of tabulating cards unique assets. A basic necessity to planned business expansion, the tabulating card is as important to modern business leaders as the quill pen was to their forefathers.

U.S. Corrugated Names Cole President

Robert S. Cole, who recently resigned as vice president of the Corning Fibre Box Corp., has been named president and general manager of the U.S. Corrugated Fibre Box Co., operator of six corrugated cardboard plants and one sheet plant.

Mr. Cole was with the Corning company since 1927, serving in the sales and accounting departments, as assistant treasurer, vice president and president. He was named director in 1952.

Business Forms Inst. Schedules Meeting

The Business Forms Institute has scheduled a West Coast Members' Regional Meeting for Friday, November 13, 1959, at the California Golf Club, San Francisco. Thomas A. Taylor, second vice president of the BFI, who is vice president of Schwabacher-Frey Co., of San Francisco, will direct the one-day business meeting of the Institute.

Walters Promoted At Panelyte

St. Regis Paper Co. has announced the appointment of Charles L. Walters as general manager of the Panelyte Division's decorative laminating plant in Kalamazoo.

Mr. Walters, general sales manager for decorative Panelyte since 1953, has been with the division since 1940 in both sales and manufacturing.

W. J. Simons

R. J. Norman

Continental Can Div. Appoints Four

Four appointments in the Paper Container Division of Continental Can Co. have been announced.

S. R. Panter has been named sales manager of the eastern region with responsibility for general line products. Formerly district sales manager in the middle Atlantic states, he will now have his headquarters in Montclair, N. J.

W. J. Simons has been appointed sales manager of the central region. He was previously the division's manager of sales and product administration and, prior to that, district sales manager in the Metropolitan New York area. His offices will be in Chicago, Ill.

R. J. Norman will succeed Mr. Simons. From his headquarters in Newark, N. J. he will direct establishment and execution of sales department procedures geared to effect improved customer relations.

T. P. McGlynn has been named manager of market and new product development. At the Newark sales office he will supervise product development activities of the Paper Container Division and the development of markets for both new and existing products. He was manager of market development.

T. P. McGlynn

Gardner Div. Announces Personnel Changes

The Gardner Division of Diamond National Corp., Middletown, Ohio, has promoted Frederick E. Burk to carrier salesman. He will work out of the St. Louis office. Mr. Burk attended Miami University and the University of Cincinnati evening college. He joined the company in 1956 as a junior sales correspondent.

Jack H. Harrington is now district sales representative, board sales, in the Cleveland Office. A graduate of Ohio State University, he came to Gardner as a sales trainee in 1958.

Ronald G. Thorsen has joined the company as a paraffin carton salesman in the Chicago office. Mr. Thoresen attended North Central College, Naperville, Ill. He formerly did sales work with National Carton Corp. and Carton Craftsmen, Inc.

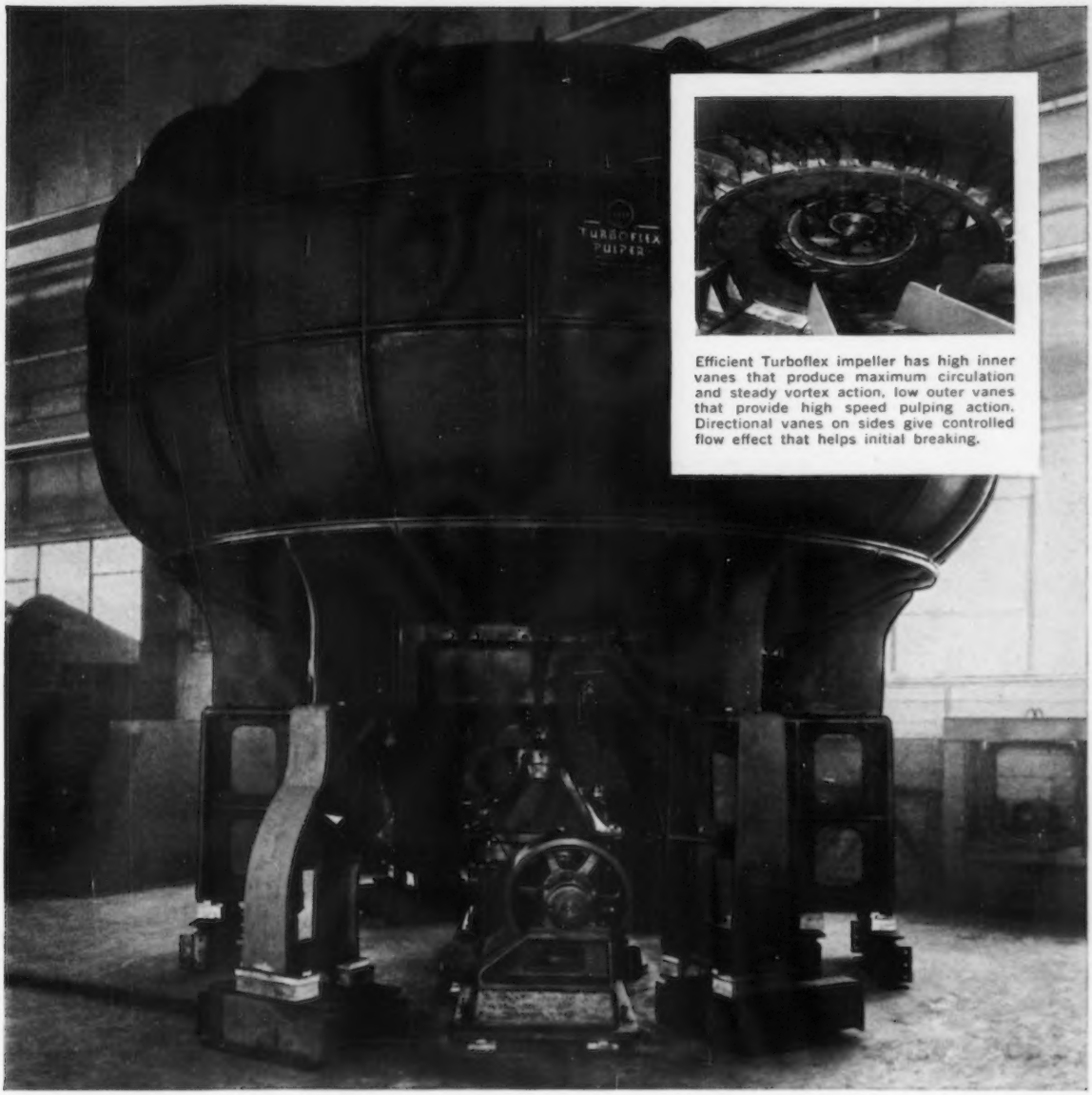
Standard Packaging Corp. Expands Royal Lace Div.

Royal Lace Paper Division of Standard Packaging Corp. will move its operation into a new building in Fort Wayne, Ind., this month. Its present facilities in Brooklyn, N. Y., consisting of a multifloor building, were inadequate for further expansion. The Fort Wayne plant, located on 21 acres adjacent to the airport, will consist of 173,250 square feet of plant and warehouse space designed to utilize the most recent developments in production processes, materials handling and shipping, and 3,750 square feet of office facilities. Its geographic position in the center of the country will enable Royal to serve its customers more efficiently from coast to coast.

Inventories have been built up to

(Continued on page 50)

For more efficient waste paper pulping
Take a look at Turboflex



Efficient Turboflex impeller has high inner vanes that produce maximum circulation and steady vortex action, low outer vanes that provide high speed pulping action. Directional vanes on sides give controlled flow effect that helps initial breaking.

Proven in Canada by Fleck – Now built in the U.S. by Jones

With more than two decades of experience in Canadian and European mills the Fleck Turboflex pulper has earned recognition as the finest equipment of its kind available anywhere. To provide American mills with the same top efficiency in waste paper pulping, Turboflex units of all sizes are now also being built in the U.S. by Jones.

Some of the features you will prefer in Turboflex include: *curved tops* to prevent serious splashing; *specially designed impellers* for more effective defiberizing; *disc type dump valves*, instead of slide, for faster discharge; *replaceable wearing* parts for faster, lower cost maintenance.

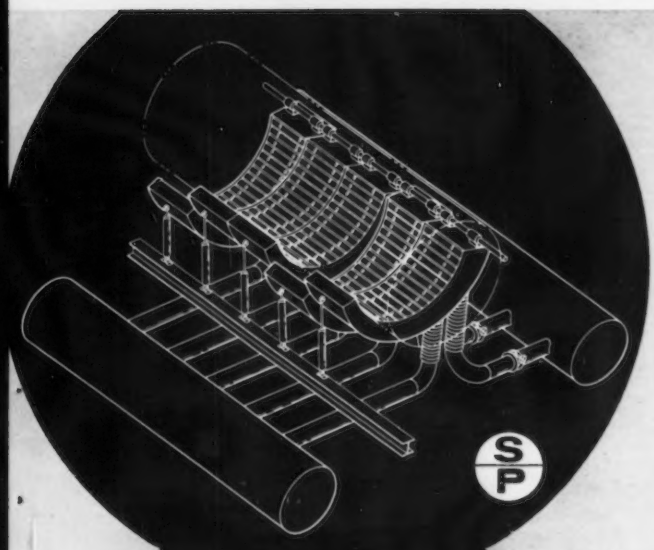
For complete details on Turboflex write to E. D. Jones Corporation, Pittsfield, Mass.

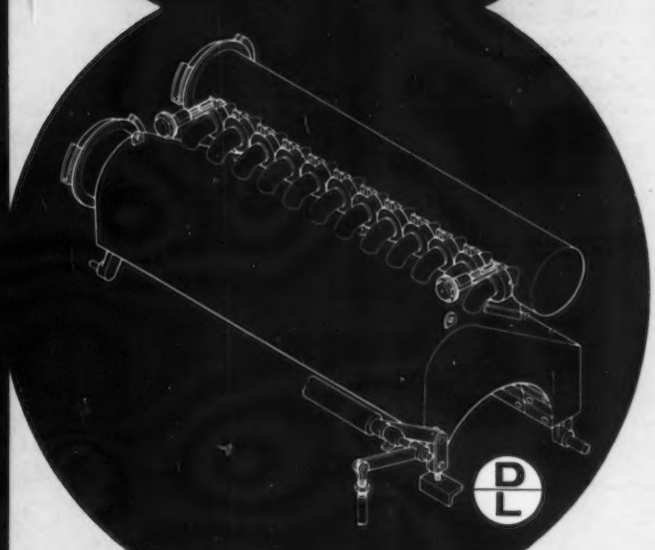
E. D. JONES CORP. · PITTSFIELD, MASS. · member BELOIT group

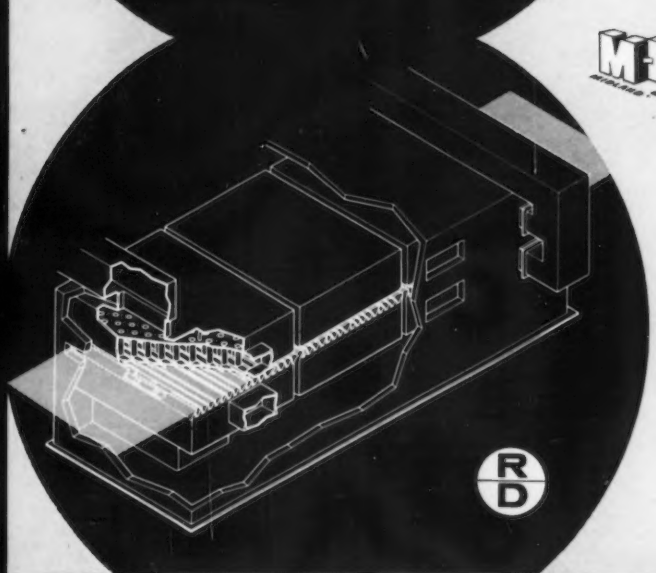
Jones

PULP MILL EQUIPMENT AND STOCK PREPARATION MACHINERY

WE'RE SELLING AIR...
...all the drying air you need at precisely the
right temperature, at the proper
velocity, exactly where you want it, day after day
with complete reliability...this is Ross...







ROSS HIGH VELOCITY DRYERS are designed with you in mind...engineered to give you a better, more uniform sheet, to increase your production, lower your maintenance and repair costs, cut your downtime, simplify your threading and to make it easier for you to clear broke.

For complete information on Ross High Velocity Dryers write for Bulletin HV-500.

J. O. ROSS ENGINEERING

Division Midland-Ross Corporation
730 Third Avenue, New York 17, N. Y.

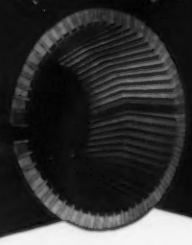
ATLANTA • BOSTON • DETROIT • SEATTLE
LOS ANGELES • MT. PROSPECT, ILLINOIS

You'll Get Longer Life, Better Performance With
BLACK-CLAWSON
X-66 JORDAN PLUGS

High strength, BlaCaloy (ductile iron) castings—precision machined. Special Mox 4 bands hold bars firmly in slots—with a full 1 inch side metal support both sides of bars—full length. Rotation of plug can be reversed for maximum jordan efficiency.

Fillings available in all materials. Full length beads on each side of bars prevent spacers from rising.

Super-Rigid
BULLDOG
SHELL FILLINGS



Write for Bulletin 22

The original pre-assembled filling—for all makes of jordans.

Assembled in special jigs for rigidity and perfect symmetry. Every bar and spacer keyed with heavy bands and reinforced for maximum strength.

Shipped to You in a Strong Fibre Container

Lighter, easier and safer to handle. Fillings stay clean and dry. Facilitates storage and inventory checks.

Available only from:
THE BLACK-CLAWSON COMPANY
SHARTLE DIVISION
MIDDLETOWN, OHIO

NEWS OF CONVERTERS

(Continued from page 46)

service customers during the times of the move and key production and management personnel are being moved to Fort Wayne to provide the nucleous for operations at the new plant.

The sales offices will be relocated at Standard Packaging Corp.'s headquarters at 200 East 42nd Street, New York 17, N. Y.

Continental Can to Double L.A. Corrugated Capacity

Continental Can Co. will double the capacity of its Los Angeles corrugated box plant next year when it completes the installation of equipment at a new location it has leased, Peter P. Wojtul announced.

A one-story pre-cast concrete panel building at 6400 East Washington Boulevard has been leased by Continental. The new corrugated plant has an area of 213,000 square feet and will be equipped with a Langston combiner which will produce a continuous sheet of corrugated paperboard, 85 inches wide, at a rate of 10 million square feet a week on a two-shift basis. The new plant will be in full operation by March 1, 1960, and will employ 150 men and women.

Continental and its predecessor Robert Gair Co., which merged with it in 1956, have operated a corrugated box plant at 5120 South Soto Street in Los Angeles since 1954. The company has other Los Angeles plants which manufacture bottle caps, paper containers, cans, boxboard and folding cartons.

Transo Promotes Hankin To New Post

Transo Envelope Co. has announced the promotion of Julius T. Hankin to the position of director of industrial relations and enginering. He will be responsible for the industrial engineering function, the industrial relations function, and the cost accounting function for all three Transo plants: Central, Chicago; Eastern, Jersey City, N.J.; Western, Glendale, Cal.

Mr. Hankin is a 1954 graduate of Illinois Institute of Technology. He has a Bachelor of Science degree in industrial engineering. A native of Baltimore, Md., he has been with Transo since February 1955.

"Since this is the direction the flood was coming I thought I'd deliver your order."

Pulp Paper and Board Mill Maintenance

Based on actual in-plant experience and prepared by well known men in the paper industry, this 126 page book brings you in easy to read language procedures for plant maintenance of kraft mills, semi-chemical mills, bleach plants, fourdrinier and cylinder machines, stock preparations equipment, and other machinery used in pulp and paper making. Price $2.50.

Contents

How to Organize a Better Maintenance Department 7
Planned Maintenance is Productive Maintenance 11
The Consultant's Role in Paper Mill Maintenance 14
A Drafting Board Can Reduce Your Maintenance 16
Maintenance Problems of the Smaller Mill 18
Let's Put Lubrication in a New Perspective ... 20
What an Engineered Lubrication Program Involves 22
Take Care of That Cable 27
What a West Coast Mill Does About Woodroom Maintenance 28
Woodyard and Woodroom Maintenance at Brunswick 31
Groundwood Mill Maintenance 33
Cutting Costs of Pulp Mill Maintenance 37
Maintenance at a Semi-Chemical Mill 40
Maintenance of Black-Liquor Recovery Units .. 42
Use of Protective Liners in Kraft Digesters .. 44
Special Problems of Bleach Plant Maintenance 51
Maintenance of Stock Preparation Equipment 53
Fourdrinier Machine Maintenance Procedure .. 56
Twenty Tips for Longer Belt Life 59
Yankee Dryer Maintenance at Scott Paper Co. 60
Repairs on Grooved Press Rolls at Brunswick .. 64
How to Plan and Carry-out Finishing Maintenance 66
Installation and Maintenance of Gears and Gear Drives 70
Calender Stack Maintenance 75
Selection and Maintenance of Transmission Belting 78
Power Plant Maintenance at CZ Camas Mill .. 83
Equipment Necessary for Electrical Maintenance 87
Maintenance of Electrical Transformers 91
Maintenance of Paper Mill Electronic Equipment 93
Developing an Instrument Maintenance Department 99
Industrial Truck Maintenance at E. B. Eddy Co. 105
Tips on Grinding Rubber Covered Rolls 111
Organization and Operation of Maintenance Personnel Training 112
Modern Maintenance Means Money for Mead 117

LOCKWOOD TRADE JOURNAL COMPANY, INC.
49 West 45th Street, New York 36, N. Y.

Yes, rush me post-paid a copy of your just-published book, PULP, PAPER & BOARD MILL MAINTENANCE at $2.50

☐ Payment Enclosed

Name ..... Title.....
Company .....
Address .....
City..... Zone..... State .....

TC TENNESSEE CORPORATION

LIQUID SULFUR DIOXIDE FOR EFFECTIVE REMOVAL OF Residual Chlorine

Tennessee's Liquid Sulfur Dioxide is a most efficient and economical anti chlor. Removes residual chlorine and other materials which cause color reversion or yellowing with age. It also eliminates excessive residual chlorine in water.

LIQUID SULFUR DIOXIDE HIGHEST QUALITY SO_2

Available In:
• CYLINDERS • TANK TRUCKS
• TON DRUMS • TANK CARS

We would like to consult with you on the possibilities of Tennessee's Liquid Sulfur Dioxide in your processing

TC TENNESSEE CORPORATION

TENNESSEE CORPORATION
617-29 Grant Building, Atlanta, Georgia

ALBANY FELT *Design* BEGINS IN YOUR MILL

Your paper machine is only as good as its felts

The finest machine in the world will go only as fast as its felts will allow.

Albany Felts get the best performance out of your machines because they're custom-designed and custom-built . . . like a made-to-measure suit of clothes that takes into consideration every individual requirement.

Your Albany Felt Sales Engineer is trained to survey your paper machine and measure its efficiency of felt application. His specialty is setting in motion Albany Felt's 4-step design service.

Working with him is a team of research, design and production experts known the world over. Together, they can help you make <u>sure</u> your machine is clothed correctly for more tons per day, more days per felt.

S. Stuart Engle

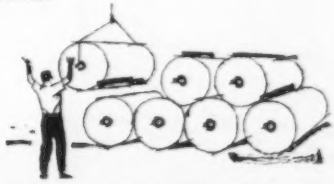
S. Stuart Engle,
Chief Designer

NEW IDEAS FOR BETTER PAPERMAKING—FROM

❶ **FIRST STEP IN ALBANY FELT EFFICIENCY SURVEY** is discussion of aims and operating problems by Superintendent and Albany Felt Sales Engineer, with all pertinent data recorded.

❷ **ANALYZING THE SALES ENGINEER'S REPORT,** Albany Felt Design specialists determine the felt specifications that will best solve customer's felt application problem.

❸ **DESIGN SPECIALIST REVIEWS REQUIREMENTS** with Manufacturing and Quality Control personnel.



❹ **RESULT: MAXIMUM FELT LIFE AND MAXIMUM DAILY PRODUCTION!**

ALBANY FELT COMPANY

Main Office and Plant: Albany, N. Y.

Other Plants: Hoosick Falls, N. Y., N. Monmouth, Me., St. Stephen, S. C., Cowansville, P. Q.

THE WORLD'S LARGEST MAKER OF PAPER MACHINE FELTS

CHAS. T. MAIN, INC.
ENGINEERS
PROCESS STUDIES, DESIGN, SPECIFICATIONS, CONSTRUCTION SUPERVISION
PULP AND PAPER MILLS
STEAM, HYDRAULIC AND ELECTRICAL ENGINEERING
REPORTS, CONSULTATION, VALUATIONS
•
BOSTON, MASSACHUSETTS
CHARLOTTE, NORTH CAROLINA

CONSTRUCTION SPECIALTIES
Chimneys, soil compaction, equipment erection, sliding form construction are Rust specialty services. Available as a single contract or part of a large contract. Ask about Rust's Complete Service.
THE RUST ENGINEERING CO.
PITTSBURGH 22 • BIRMINGHAM 3

LOCKWOOD GREENE
ENGINEERS
Site Investigations, Design and Construction Supervision
PULP AND PAPER MILLS
Steam, Electrical, Water, Waste Reports, Appraisals
MONTGOMERY BLDG. SPARTANBURG, S.C.
NEW YORK BOSTON

Serving Timber Industry since 1910
Timber Estimators and Foresters
C. D. SHY & COMPANY
1130 Commerce Title Building
Memphis 3, Tennessee

Prices of Fibers

MARKET WOOD PULP

FOURTH QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$ 82.50/ 90.00	§$90.00/ —	§$80.00/ —	§$90.00/ —
Bleached Gw'd	$ 97.50/100.00	$ 97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	$157.00/162.50*		$157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		$137.00/ —		
Kraft, Semi-bleached.	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		140.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

§ On Dock Atlantic Ports. • Freight allowed. † Varying Freight Allowances.

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED OCTOBER 13

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	n.a.	n.a.	n.a.	n.a.
2	$8.00/7.50	n.a.	n.a.	$7.75/7.50
3	7.50/6.00	$8.00/7.00	$6.75/6.50	7.25/7.00
4	6.00/5.25	6.25/5.75	6.25/5.25	6.75/6.25
5	5.25/4.75	5.00/4.75	4.75/4.50	6.00/5.60
6	4.75/3.50	4.50/4.25	4.00/3.25	5.00/3.75
7	3.50/2.50	3.50/2.75	3.00/2.75	3.00/2.75

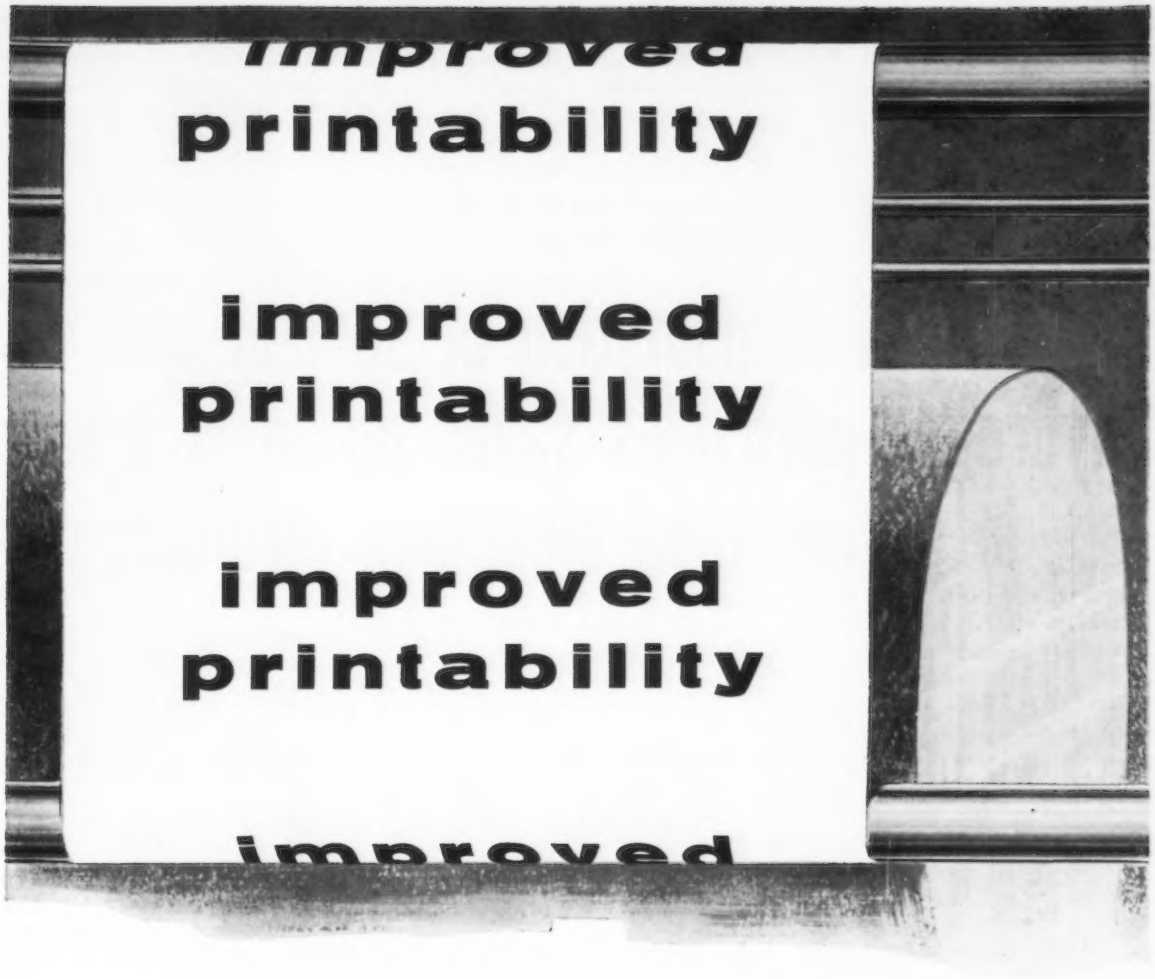
WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Oct. 19	Oct. 19	Oct.	Oct.
No. 1 Mixed Paper	$ 10.00/ 12.00	12.00/ 14.00	9.00/ —	13.00/ 15.00
No. 1 News	17.00/ 18.00	17.00/ 18.00	18.00/ —	16.00/ —
Overissue News (Lg. size)	16.00/ 18.00	15.00/ 17.00	23.00/ —	19.00/ 20.00
Mill Wrappers	19.00/ 22.00	13.00/ 15.00	14.00/ —	15.00/ —
Old Corrugated Containers	24.00/ 25.00	23.50/ 24.00	23.00/ —	23.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	35.00/ —	55.00/ —
New Double Kr. Ld. Corr. Cuts	35.00/ 37.50	37.50/ —	37.50/ —	35.00/ —
(Semi-chem. medium)	47.50/ —	47.50/ —	45.00/ —	36.00/ —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Unprintd	60.00/ 65.00	65.00/ 75.00	60.00/ —	60.00/ —
No. 1 Groundwood Shvs.	25.00/ 30.00	25.00/ 30.00	24.00/ —	35.00/ —
White Newsblanks	65.00/ 70.00	53.50/ 60.00	45.00/ —	60.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	60.00/ —	70.00/ —
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	70.00/ —	— / —
Hd. White Shvs.	85.00/ 90.00	90.00/100.00	85.00/ —	95.00/ —
Hd. White Env. Cuts	100.00/105.00	105.00/110.00	90.00/ —	113.00/ —
Col. Tab. Cards	55.00/ 57.50	55.00/ 57.50	52.50/ —	45.00/ 47.50
Manila Tab. Cards	77.50/ 80.00	77.50/ 80.00	75.00/ —	75.00/ 80.00
No. 1 Col. Ledger	40.00/ 45.00	37.50/ 42.50	47.50/ —	35.00/ —
White Ledger	60.00/ 62.50	60.00/ 65.00	57.50/ —	55.00/ —
Mixed Book & Mag.†	22.00/ 25.00	— / —	17.00/ —	— / —
No. 1 Books‡	25.00/ 27.50	19.00/ 21.00	35.00/ —	17.50/ 19.50

† Includes Time & Life; no coarse groundwood. § Not to exceed 10% of groundwood.



with Gelva C-3 and C-5 copolymer resins

When used as a surface size, GELVA C-3 and C-5 polyvinyl acetate copolymer resins impart a smooth finish to paper. Ink receptivity is improved. Contrast is sharply defined. Furthermore, when deposited from ammoniacal solution, the resin imparts to the sized sheet a more water resistant film. Improvements in wet and dry tensile and Mullen are also obtainable. The resins are alkali soluble. Broke recovery is quick and easy.

Write for full technical information on GELVA C-3 and C-5. Shawinigan Resins Corporation, Department 6343, Springfield 1, Massachusetts.

SALES OFFICES: ATLANTA CHICAGO LOS ANGELES
NEW YORK SAN FRANCISCO SPRINGFIELD

PROPERTIES

Form—Fine beads (0.2—1.0 mm. diameter)
Transparency—Excellent
Light Stability—Good
Storage Stability—Excellent

	Softening Point	Maximum Flowable Solution
C-5V-10	123°C	20%
C-3V-10	123°C	35%
C-5V-16R	134°C	20%
C-3V-20	155°C	25%
C-3V-30	180°C	20%

Softening Point: Ball and Ring Method
Solution: Ammoniacal

GELVA® *polyvinyl acetate resins by* **SHAWINIGAN RESINS**

BETTER PAPERMAKING *with Du Pont Peroxides*

Why a combination of sodium and hydrogen peroxides saves up to $1 a ton in groundwood bleaching formulas

Over 95% of the groundwood bleacheries in the country that use peroxide for bleaching use a *combination* of sodium and hydrogen peroxides rather than hydrogen peroxide alone. Reason: Because of the bleaching chemistry involved, they've found it makes better economic sense to use them together. Here's the fascinating story of two chemicals working together—to do an effective job at a lower cost.

Caustic soda is key factor

An effective bleaching solution of hydrogen peroxide requires the addition of substantial quantities of caustic soda. In order to obtain a balanced caustic soda-peroxide formula the "two-peroxide" bleaching method came into use. This method *starts* with *sodium peroxide*, which supplies caustic soda and hydrogen peroxide in solution. After the caustic soda limit of this bleaching solution has been reached, additional hydrogen peroxide is added to the formula. The formula is now balanced in respect to sodium hydroxide and peroxide . . . and the process is ready to operate.

***Below* is a graphic presentation of the chemistry involved. Bear in mind that it is the perhydroxyl ion (OOH^-) that does the bleaching:**

$$Na_2O_2 + 2H_2O \rightarrow H_2O_2 + 2NaOH \rightarrow 2(Na^+ + OH^-) + H^+ + OOH^-$$

Here are two bleaching formulas—one a straight hydrogen peroxide formula, and the other a combination formula—each containing peroxide equivalent to 2% "Solozone" sodium peroxide and a total alkalinity of 1.8% as NaOH.

FORMULA A

1.7%	"Albone" 50 hydrogen peroxide
1.2%	caustic soda
5.0%	sodium silicate
0.05%	Epsom salt

FORMULA B

1.2%	"Solozone" sodium peroxide
0.7%	"Albone" 50 hydrogen peroxide
5.0%	sodium silicate
0.05%	Epsom salt

(Note: 1-lb. sodium peroxide is the equivalent of 0.85 lbs. of 50% hydrogen peroxide and 1.03 lbs. of caustic soda.)

These are typical mechanical pulp bleaching formulas, equivalent in every way, but Formula "B" will save approximately $1 a ton over Formula "A" in actual application.

Du Pont supplies both bleaching agents – can help you

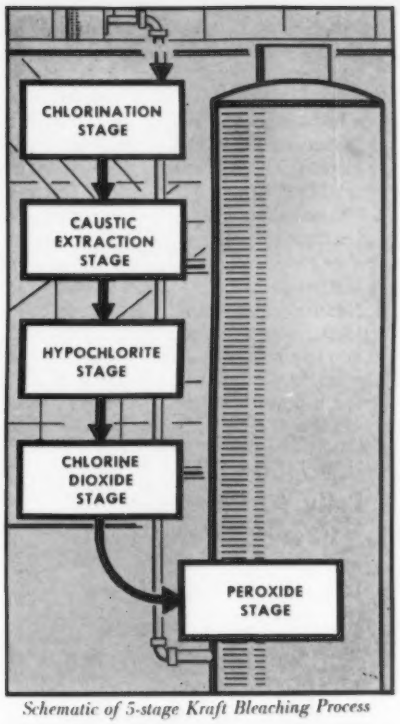
Du Pont manufactures "Albone" hydrogen peroxide and "Solozone" sodium peroxide and has served the paper industry with these high-quality bleaching agents for many years. As the only manufacturer of both types of peroxide, Du Pont has a background of practical experience in setting up combination formulas that could prove useful to you. Whether you produce groundwood, sulfate or sulfite pulps Du Pont's Technical Representative will be glad to help. You'll find the Du Pont office nearest you listed at the bottom of the opposite page.

Du Pont's 6-step help you produce

This complete Du Pont service plan will help you meet today's market requirements. It's conducted by experienced technical men employing the full facilities of Du Pont's research and development laboratories. Du Pont will use one or all of the steps below, depending on the situation in your plant.

1. Mill conference – Includes ideas to improve your operation where possible.

2. Lab trial – Tests to evaluate suggestions; a confidential plan for mill trials is submitted.



Schematic of 5-stage Kraft Bleaching Process

PROFITS WITH PEROXIDE

President of the Gould Paper Company —R. W. Luethi

"Now we can use hardwoods—get 78-80 pulp brightness—we've upgraded our papers"

R. W. Luethi, president of the Gould Paper Company in Lyons Falls, N. Y., reports great success with a two-stage peroxide-hydrosulfite process for bleaching chip mechanical pulp. He reports: "We can use local hardwoods—birch, beech and maple—for such profitable lines as high-quality book papers.

"Peroxide bleaching eliminates the yellowish cast our pulp had with former hypochlorite system; it gives better whiteness and 78-80 G.E. brightness . . . 35 *points* over unbleached pulp. Production is up, too, because of the better yield."

Du Pont Technical Representatives worked closely with Gould's staff from initial planning to installation and operation of equipment. The peroxide hydrosulfite process has worked so well Du Pont is now helping Gould with its plan to double present production.

Here are the steps in a typical two-stage bleaching system

- Pulp is washed to remove chemicals used in initial chip treatment.
- The slurry is acidified and thickened to 15% consistency.
- Then bleached with peroxide and neutralized with sulfur dioxide.
- Pulp is diluted to 4% consistency and pumped to hydrosulfite stage.
- After bleaching and washing, it is then pumped into storage chest.

You may be able to profit from this peroxide process for bleaching chip mechanical pulp, just as other mills are doing. If you are faced with "hardwood problems", *call Du Pont.*

5-stage kraft bleaching process provides brightness up to 90 plus stability

You probably know of several bleaching processes that can brighten pulp up to 90, but here's one that does it and provides top brightness stability, too. It's a 5-stage process now in use by several major mills and it combines the best features of three bleaching agents —hypochlorite, chlorine dioxide and peroxide.

Peroxide bleaching in the final stage produces a pulp with high brightness stability—an important sales benefit in today's demand for brighter paper products. Another advantage of this process is flexibility—pulp can be obtained at 65, 85 and 90 brightness.

If you would like to review the advantages of the 5-stage process as applied to your specific situation —*call Du Pont* (see office locations below).

service plan can brighter pulp...

3. Mill trial—Du Pont works with you to confirm tests on a production basis.

4. Bleachery planning — Du Pont works with you on design and construction of equipment.

5. Bleachery start-up—Du Pont helps train your men in most efficient equipment operation.

6. Continuing service—Du Pont men call regularly to check on your operation.

Result: An efficient bleaching operation in step with changing market needs.

WHEN SHOULD YOU BLEACH IN A REFINER?—IN A TOWER?

If you make cold soda pulp, you can bleach in either place. *But* you can save thousands of dollars and make a better product if you know when to choose one over the other. To help you make the right decision call Du Pont for a complete and impartial process recommendation. Du Pont is the only supplier of peroxide that can give you the benefit of an extensive working knowledge of *both* bleaching techniques.

Electrochemicals Department

E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware

DU PONT PEROXIDES

ALBONE® hydrogen peroxide

DU PONT REG. U. S. PAT. OFF.

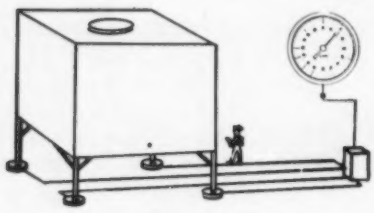
SOLOZONE® sodium peroxide

BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

PJT NEW EQUIPMENT & SUPPLIES

Weighing System Also Leveler

The Weber Air-Mount Weighing System for weighing the contents of bins, tanks, trucks, conveyor loads



and anything that can be weighed on platform scales is now available for loads covering the entire range from 0-300 lbs. to 0-200,000 lbs. The National Bureau of Standards has calibrated, tested and noted these units to have a repeatable accuracy of better than 1/10 of 1 per cent.

This system requires no changes in floor construction or foundations. The complete equipment for a 4-legged 30,000 lb. tank or storage bin or equivalent weighing problem is ordinarily installed in less than an hour.

In application, a small load cell is placed under each leg of the tank, bin, conveyor or other fixture. An adjustment of the height-adjusting screw of each load cell will raise the fixture so that it is supported on a column of air in the load cell. By adjustment of this screw, unevenness in floor level can be corrected up to ¼-inch differential, so that each leg will support its fair share of the load.

The linear pneumatic pressure is automatically controlled in each load cell, so that a pneumatic signal is directly proportionate to the load. Any changes in load are read on a remote indicating meter. Distance from fixture to remote meter is not limited.

The unit is a constant height device, regardless of increasing or decreasing load in the tank, container or on a conveyor or machine. For given increase in load there is a corresponding and automatic increase in air pressure to balance the load but no change in height.

Weber Air-Weigh units will reportedly also absorb the vibration developed in some types of mixing tanks and prevent its transfer to floor or building, while also maintaining tank level.

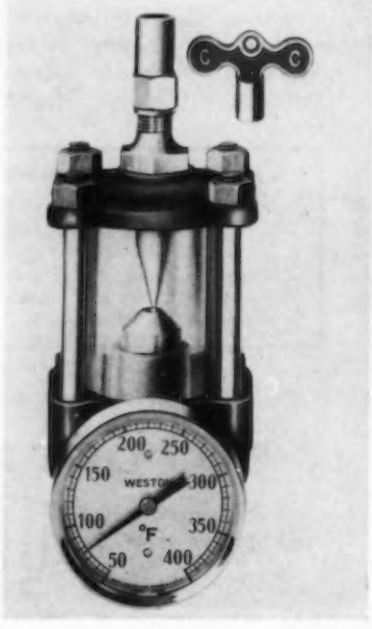
Normal factory air pressure is sufficent. No constant flow of air is used, so there is no burden on the air supply. Literature is available on request from Weber Air-Weigh Co., 13845 Elmira Ave., Detroit 27, Mich.

Condensate Flow Regulator Replaces Steam Traps

A condensate flow regulator said to outperform steam traps in many applications is offered by Stickle Steam Specialties Co., 2215 Valley Ave., Indianapolis 18, Ind.

Known as Stickle micro adjustable orifice (Series 300), the regulator is essentially an adjustable needle valve encased in a sight glass. It is designed to replace steam traps for drainage of heating and processing units operating continually at pressures up to 60 p.s.i.

Unlike steam traps which operate intermittently, the orifice works without moving parts. Thus, it provides continuous circulation of condensate, and is virtually maintenance-free.

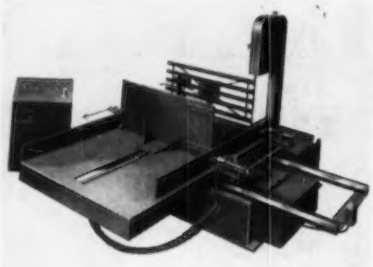


Condensate is drained immediately so that each steam-operated unit performs at peak efficiency. Flow of condensate can be minutely regulated by a hand key. And once the proper adjustment is made, a locked shield prevents unauthorized change in the setting.

The sight glass and optional dial thermometer permit a constant visual check on the flow of condensate and temperature of steam inside the steam-operated unit. Scale and other impurities that clog a steam trap can be flushed through the orifice by opening the valve. The orifice is made for pipe sizes from ½-inch to 1-inch.

Band Saw Fully Automatic

Model 0-50, a band saw with fully automatic operation is now available from W. F. Wells & Sons', Three



Rivers, Mich. The saw is designed for high speed production cutting of cardboard, wood, and other materials of up to 4-foot x 5-foot sheets 20-inches thick with slices taken from the 4-foot end. Maximum size of slice is 50-inches x 14-inches x ¼-inch to 14-inches.

A rolling table carries the work across the blade at a rate of travel set by the operator. It returns on rapid traverse. The clamps release, the work is advanced and reclamped. The cycle then repeats automatically until the last cut is made. The machine then returns to starting position, where the clamp and feed mechanism open for reloading. The entire cycle is automatic, and can be run at a rate of four cycles per minute.

Manual pushbuttons are used for setting up. Once set, the machine operates on completely automatic cycle. Separate control console can be located at any convenient position.

The 0-50 is built wth blade speeds and horsepower to suit individual requirements. The firm also offers modifications of this machine to cut 4-feet x 8-feet sheets any thickness,

STANLEY

STANLEY STEEL STRAPPING SERVES the PAPER INDUSTRY

- *Quality Strapping, Tools and Equipment*
- *Long Experience*
- *Factory-Trained Specialists*

More speed in packaging . . . greater protection in transit. That's why more and more modern paper mills are relying on The Stanley Steel Strapping System and Stanley's complete line of POWER Steel Strapping Tools, Machines and Equipment.

Put Stanley paper packaging and carloading experience to work for you. Let the Stanley Steel Strapping Specialist present his ideas for improvement . . . and test-prove those ideas in your own mill.

Write STANLEY STEEL STRAPPING, Division of The Stanley Works, Dept. J, 1307 Lake St., New Britain, Conn.

STANLEY **INSURE IT — SECURE IT WITH STANLEY STEEL STRAPPING**

AMERICA BUILDS BETTER AND LIVES BETTER WITH STANLEY

STANLEY

REG. U. S. PAT. OFF.

This famous trademark distinguishes over 20,000 quality products of The Stanley Works, New Britain, Conn.—hand tools • electric tools • builders hardware • industrial hardware • drapery hardware • automatic door controls • aluminum windows • stampings • springs • coatings • strip steel • steel strapping—made in 24 plants in the United States, Canada, England and Germany. In Canada: Steel Strapping Division, The Stanley Works of Canada Ltd., Hamilton, Ontario

and slice blocks through any dimensions.

The machine is 73-inches high, 103-inches front to back, and 110-inches side-to-side, weight 3200 lbs. Blade size is 13-feet 2-inches x 1-inch x .035-inch. Accessories available include JIC electricals, JIC hydraulics, special paint, work light, hydraulic filter.

Crawler Crane Is Air Powered

The Thew Shovel Co., Lorain, Ohio, announces a 40-ton crane in the 1¼ yard class Model 56. The Lorain is

mounted on a 14-foot long, 13-foot wide crawler and handles up to 110-feet of boom. The turntable is connected to the crawler by Lorain single-race "shear-ball" connection.

The machine is also equipped with Thew's patented boom of sealed square-tubular-chords made of high alloy steel, and sealed, round tubular lacings. Boom-tip extensions may be added up to 40-feet.

Two "joy stick" levers control single or combined operations of all turntable clutches with metered air power. The crawler is also air controlled. A torque converter multiplies engine torque automatically as digging conditions require. The engine cannot stall under any digging circumstances, emphasizes Thew. The converter relieves engine, mechanism and cables of digging impacts and stresses.

The Lorain 56 also incorporates wide use of anti-friction bearings in such places as the travel shaft, hoist and swing drums. The travel mechanism is enclosed by a gear case cover which allows the entire unit to run in a constant oil bath as well as protecting against dirt and water. The rear counterweight is easily detached for weight reduction in highway transport. The new Lorain is convertible to dragline, clamshell, crane or hoe as desired.

Belt Drive Assemblies Compact

The Wood's "Ultra-V" drives are claimed to be capable of handling up to three times the horsepower of conventional V-belt drives occupying the same space. Likewise a shift to Ultra-V will save both weight and space for a drive of given horsepower.

As a specific example, one particular 100-horsepower standard V-belt drive requires a driver sheave of 9.4-inch pitch diameter, a driven sheave of 20.0-inch pitch diameter and nine "C" belts. Total weight is 265 pounds.

For the same horsepower and service factor, the corresponding Ultra-V drive would require a driver sheave of 7.5-inch o.d., a driven sheave of 16-inch o.d. and eight 5V belts, says Wood. Total weight is 173 pounds; weight saving 34.72 per cent.

With Ultra-V, the number of belt cross-sections is reduced from five to three. The entire range of drive requirements from 1 to 1,500 horsepower is covered by these cross-sections: 3V—⅜ inches wide by 5/16 inches deep; 5V—⅝ inches wide by 17/32 inches deep; 8V—1 inch wide by ⅞ inches deep.

These smaller drives reputedly reduce shaft overhang, increase bearing life; on some large drives the Ultra-V will eliminate the need to employ outboard bearings.

Modern synthetic fibers and rubbers are utilized to the fullest extent. Exceptionally stable, the Ultra-V belts are subject to little if any shelf shrinkage. All are static conductors and are resistant to heat, oil and outdoor exposure. They are available in one grade only.

All Wood's Ultra-V high-strentgh alloy cast sheaves are equipped with interchangeable "Sure-Grip" tapered bushings, QD type. The same Ultra-V sheaves may be installed on shafts of different sizes, or sheaves of different sizes may be installed on the same shaft. Sure-Grip bushings can be either standard or reverse mounted, providing additional flexibility. T. B. Wood's Sons Co., Chambersburg, Pa.

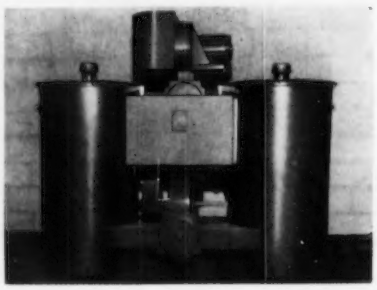
Looking for a new position?

Looking for new personnel?

Keep your eye on our Classified Advertising Section

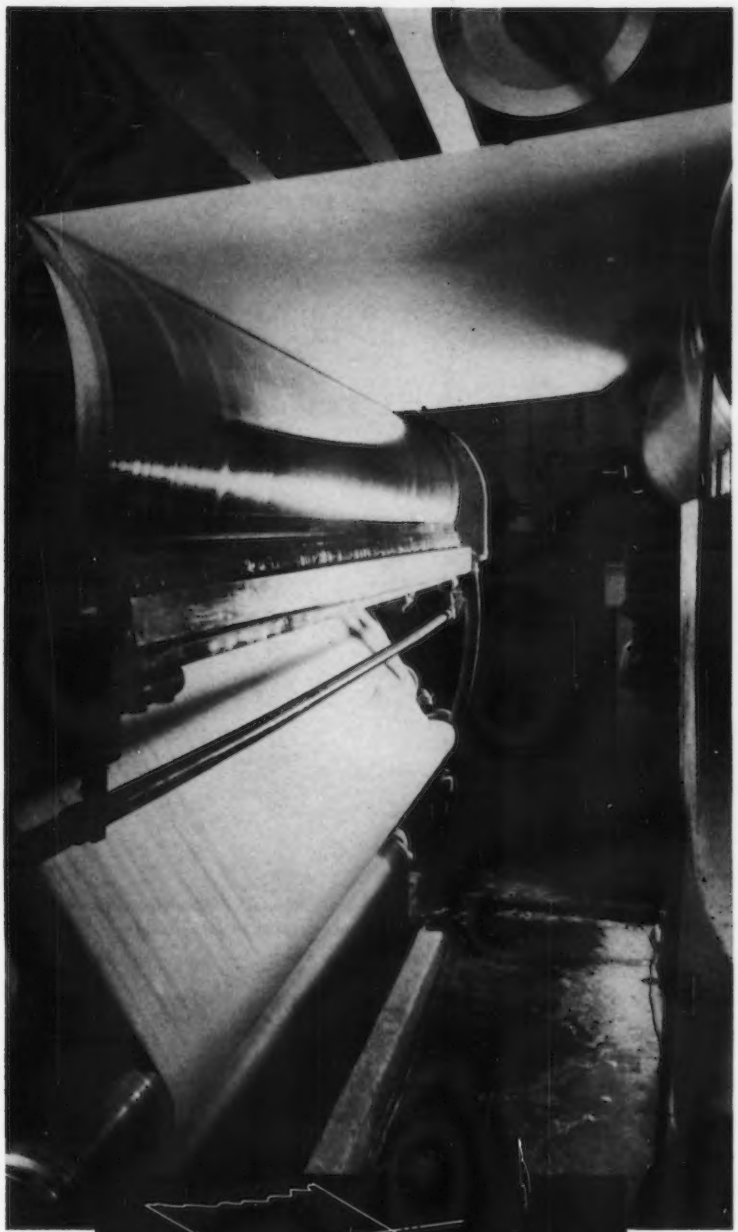
Dehumidifier Self-Contained

UNA-DYN model A75 is a completely automatic, "packaged" adsorption dehumidifier with new high



capacity adsorption and reactivation systems and efficient high flow-low flow transfer valves, says Universal Dynamics Corp. of Arlington, Va. The A75 handles as much as 700 cubic feet per minute and can remove 300 lbs. of water in 24 hours. Used originally for controlled humidity storage, the "A" line of dehumidifiers can also be employed for dry air in processing applications, humidity control in unheated spaces, low temperature installations, and also in combination with cooling equipment for humidity control without the expense and complications of using re-heat.

The A75 features "plug-in" installation and clean design. It has a minimum of moving parts and thermostatically protected heaters, and it may be used with either electrical, steam or gas reactivation. Variations of this model are also available for high temperatures, laboratory dewpoints such as minus 100°F (less than 1 per cent r.h. at 40°F), selective purification by adsorption, drying temperature—sensitive products, and dehydrating certain liquids as well as air and gases.



Lodding Press Doctors ride with the roll

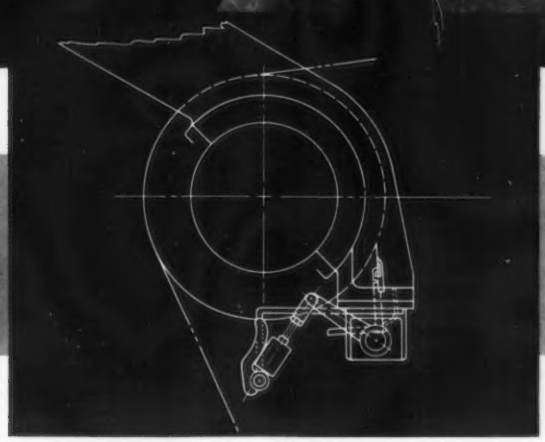
THE MECHANICALLY OSCILLATING top press roll doctor pictured here was custom made for the second press on No. 4 machine at the Sorg Paper Company. It was planed to conform exactly to the crown in the roll. Afterwards, it was optically checked, by means of a special alignment telescope, to make certain it came within critical tolerance specifications.

Mounted on the press arms, this Lodding Press Doctor always rides with the roll — in perfect balance, perfectly aligned with the axis, no matter what position the roll takes. Steady, uniform pressure is exerted by the blade over its entire length with no danger of damaging the roll covering.

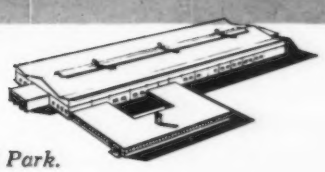
Thousands of custom-engineered Lodding Doctors, like this one at Sorg, are performing dependably on all kinds of machine rolls in mills everywhere. That's because each doctor was precision made by specialists for a specific application.

So whether you need doctors for press rolls or any others, from Fourdrinier to reel, you get guaranteed satisfaction in Lodding Doctors.

Get in touch with Lodding or your nearest sales representative for complete information.

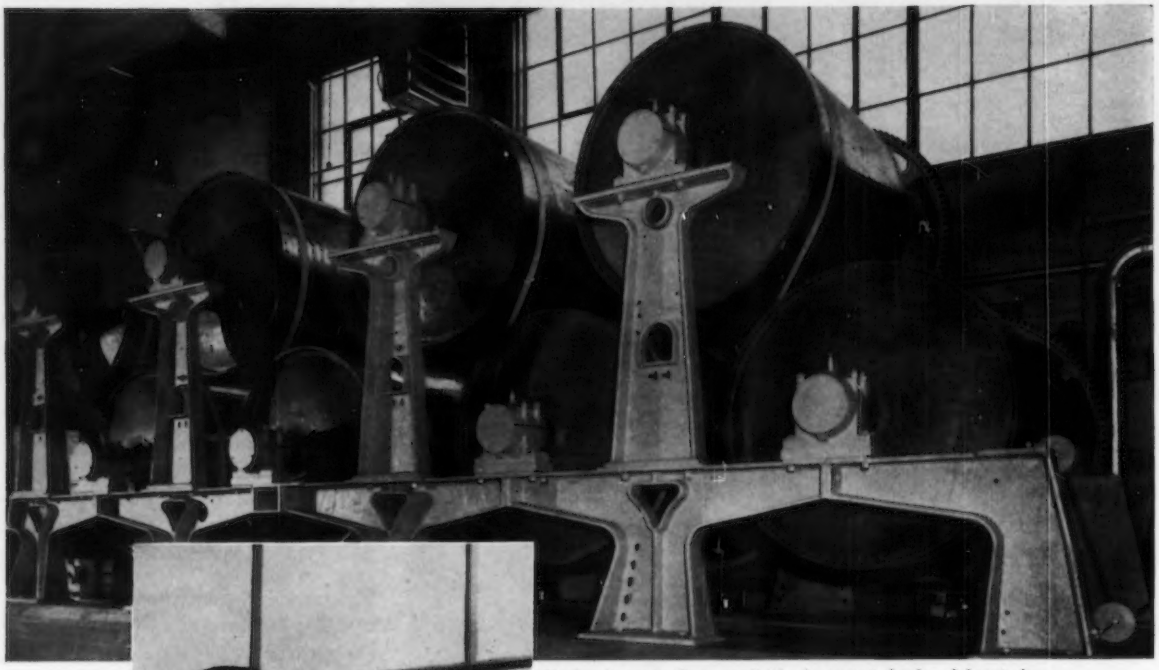


LODDING
Engineering Corporation
AUBURN, MASSACHUSETTS



We welcome your inspection of our new plant located in Worcester's Auburn Industrial Park.

with DAREX LATEX C



Drying drums in Dewey and Almy's paper technology laboratories.

. . . your gain is our gloss!

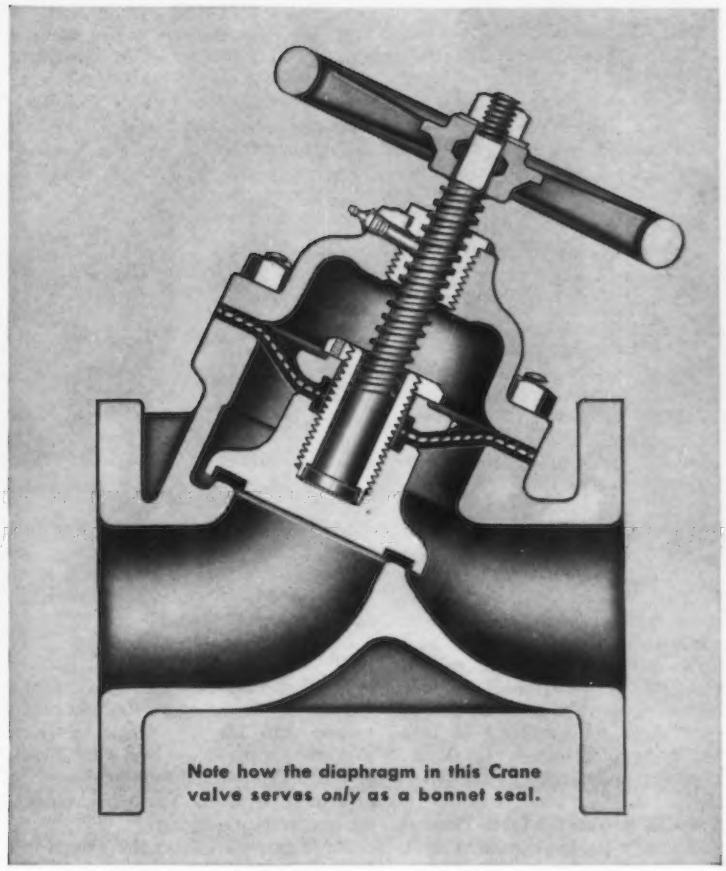
You certainly do achieve a super-smooth finish and a higher gloss with DAREX LATEX C. But there's much more to this story.

LATEX C lets you formulate *safely* with high solids content. It gives you faster drying at less heat. It has been thoroughly tested and approved in a variety of coating formulations, including casein, starch and soya protein. And it can be used with any coater, high or low shear—roll, air knife, trailing blade.

Today Dewey and Almy is in a position to supply your needs faster than ever before, both from our Cambridge plant and from extensive new facilities at Owensboro, Kentucky.

Talk it over with your technical people. They have the facts at their finger tips. Or write to the address below, attention Organic Chemicals Sales, and ask for the DAREX LATEX C brochure.

W. R. GRACE & CO.
DEWEY AND ALMY CHEMICAL DIVISION
Cambridge 40, Mass.



Note how the diaphragm in this Crane valve serves *only* as a bonnet seal.

Crane screwed-end diaphragm valve: ½" to 2". Flanged ends: ½" to 14". Four body materials; five trims. Special body and trim materials available on order.

Lined valves—flanged ends only. Neoprene and hard, natural rubber linings regularly available. Other linings on special order.

Crane separates disc and diaphragm to make diaphragm valves last longer

NOW IN SIZES UP TO 14 IN.

The diaphragm in ordinary valves is stretched to serve as a disc as well as a bonnet seal. This makes it vulnerable to crushing, cutting and abrasion. Result: accelerated wear . . . threat of rupture . . . frequent diaphragm replacement.

Not so with Crane diaphragm valves. The diaphragm has only *one* function: sealing the bonnet against line fluids. Result: diaphragm lasts longer—there's less valve maintenance cost. The disc is a *separate unit* and shuts off flow even if the diaphragm should fail.

Typical added Crane features

Y-pattern body offers least resistance to flow, minimizes pressure drop . . . *flat-faced disc* with durable, resilient insert ring resists erosion; seats tightly . . . valve operation requires lower torque; fewer turns.

Handle all types of fluids

Crane diaphragm valves are available for a wide variety of services—from water, air and gas to corrosive, volatile and hard-to-hold liquids. They are supplied regularly with bronze, cast iron, aluminum or stainless steel body—with neoprene, buna N, natural rubber, Kel-F or Teflon trim. Neoprene or hard, natural rubber lined valves also supplied. Other body materials, trims and linings on special order.

For complete details, consult your Crane Representative or write to address below for bulletin.

Ask for new Bulletin AD-1942

CRANE® VALVES & FITTINGS

PIPE • PLUMBING • HEATING • AIR CONDITIONING

Since 1855—Crane Co., General Offices: Chicago 5, Illinois—Branches and Wholesalers Serving All Areas

PTJ NEWS OF SUPPLIERS

P. B. Newell

R. D. Elder

Bailey Meter Co. announces the appointment of P. B. Newell as resident engineer in Tulsa, Okla., subdivision of the company's Kansas City district. He succeeds L. E. Bartel who has been assigned to the San Francisco district.

Bailey Meter, whose headquarters are in Cleveland, Ohio, manufactures instruments and automatic controls for the power and process industries.

Mr. Newell joined the company in 1951 as an engineering trainee. After completion of his training, he was assigned to the Houston district, and in 1955 was transferred to Dallas. A graduate of Clarkson College of Technology, he holds a Bachelor's degree in mechanical engineering.

New York Air Brake Co. has appointed Raoul D. Elder division sales manager of its Aurora Pump Division. Mr. Elder succeeds John B. Bals who was appoinnted general manager. Aurora Pump Division, late last month.

Mr. Elder, a native of Aurora, received his academic training at Aurora East High School and Northwestern University. He became associated with Aurora Pump in 1953 after serving with the U.S. Air Forces.

Merrick Scale Manufacturing Co., Passaic, N. J., announces the formation of a British subsidiary, Merrick Scale Manufacturing Company, Ltd., for the manufacture and sale of Merrick's line of continuous conveyor weighing and proportioning equipment. The new plant is located in Nottingham, England.

Merrick Scale Manufacturing Company, Ltd., will build Merrick "Weightometer" conveyor scales and "Feedoweight" blending and proportioning units for sale within the British Commonwealth, exclusive of Canada, which is serviced by Hagan Corporation of Toronto.

The Dexter Co., division of Miehle-Goss-Dexter, Inc., has announced the appointment of F. I. Walsh, Jr., to the newly created post of vice president and general manager. He will make his headquarters at the Dexter plant in Pearl River, N. Y.

Mr. Walsh joined MGD in 1946 after World War II service as an officer in the U. S. Navy. As a member of The Miehle Co. division, he served in various executive posts in the engineering, sales, service and technical adjustment departments. He was Miehle's national product service manager when he transferred to Pearl River in February of this year to become assistant to G. A. Heintzmann, president of The Dexter Co.

Mr. Walsh graduated from Princeton University in 1941 with a B.S. degree in mechanical engineering.

Miehle-Goss-Dexter is the world's largest manufacturer of printing presses and machinery for the graphic arts. The Dexter Co. division, founded in 1880, is known throughout the industry for the outstanding quality and broad range of its folding, trimming, saddle and hard binding equipment.

F. I. Walsh, Jr.

R. B. Sammon

Stein Hall & Co., Inc., has announced the election of Roger B. Sammon of Toronto as president of its Canadian subsidiary, Stein Hall, Ltd., Toronto.

In a shift of top officers of Stein Hall, Ltd., David McGill, former president, became chairman of the board of directors; Mr. Sammon moved into his new position from that of vice president and Vice President Robert Strasser, former vice president, of New York, became executive vice president.

Mr. Sammon joined the company's

ClO_2

GASPESIA NOW HAS CHLORINE DIOXIDE PULP!

Don't commit yourself on future orders for sulphite pulp until you've tried the *new* Gaspesia Chlorine Dioxide pulp.

This high-quality new ClO_2 pulp is now being produced in a bleach plant only six years in operation. Space was left for this Chlorine Dioxide operation in the original plant plans. Now, Gaspesia is the only North American sulphite pulp made from northeastern woods bleached in a completely modern bleach plant, utilizing chlorine dioxide.

Gaspesia pulps have long been known for their excellent cleanliness, strength and good forming qualities. Now chlorine dioxide makes possible a brightness of 91 G.E.

Orders for trial cars are now being accepted. We suggest you order your initial shipment today to assure a steady supply in the years ahead.

GASPESIA SULPHITE COMPANY LTD.
CHANDLER, QUEBEC, CANADA

SOLD BY: **Anglo Paper Products, Ltd.**
2055 Peel Street, Montreal 2, Quebec

SALES REPRESENTATIVES IN THE UNITED STATES:
Northeastern Paper Sales, Inc.
400 Madison Avenue, New York 17, N.Y.
20 North Wacker Drive, Chicago 6, Ill.

New York offices in 1948 as a clerk in the Foreign Division. He moved to Canada in 1949 to become assistant to Mr. McGill. He also worked as a salesman in the Montreal office for several years before returning to Toronto as acting general manager. He was elected a vice president of Stein Hall, Ltd., in February 1952 and a director in 1955.

E. I. du Pont de Nemours & Co. has named Crayton K. Black manager of the trade relations section of its Dyes and Chemicals division, succeeding Paul K. Lawrence who retired at the end of September.

Holder of a number of patents in the lakes and pigment fields, Dr. Black was director of the Dyes and Chemicals division's technical laboratory for the last five years and has been assistant manager of the trade relations section since last May.

Kelite Corp., manufacturer of metal finishing and industrial maintenance chemicals and equipment, has appointed W. Douglas Cunningham district sales manager. He will be responsible for Kelite sales in the Dallas, Tex., district of the Western sales region.

Black-Clawson Co. salesmen including all territorial sales and service engineers representing the Shartle division gathered recently at the Middletown, Ohio, plant to study new equipment developments, sales policies, and sales organization planning.

Under the direction of E. M. Root, recently appointed manager of sales, the two-day program offered discussions of pressurized disk refining, application of breaker traps in filler stock systems, successes of the new P-D (Petro-diffusion System), broadening the line of Selectifier Screens, and progress of the new Liquid Cyclone high velocity stock cleaner.

Reports by experts from Black-Clawson's Pandia, Dilts and Paper Machine divisions, were presented.

National Starch and Chemical Corp.'s research and technical development facilities will soon be increased by more than 50 per cent. New construction was begun late in September with the breaking of ground for two additional buildings at the company's Alexander Research Laboratories in Plainfield, N. J.

Morden Machines Co., Portland, Ore., has announced the appointment of James L. McAndie as sales engineer for the West Coast territory.

Mr. McAndie, a West Point graduate, is a registered professional engineer. He joined Morden in 1956 as laboratory development engineer. Previous experience included design engineering for Crown Zellerbach Corp., St. Helens, Ore., in the plant engineering department. After graduation from West Point, he served with the U.S. Corps of Engineers.

Frank E. Caskey, who has represented Morden on the West Coast, is now manager of technical sales and services.

J. L. McAndie

G. D. Bright

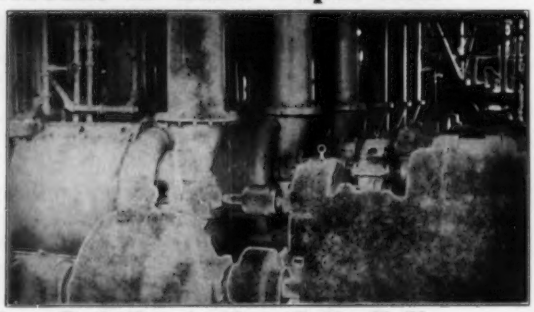
Fuller Co., Catasauqua, Pa., has appointed Glen D. Bright sales engineer assigned to operate out of its Chicago district office effective immediately. He will handle sales and service of air compressors and vacuum pumps in the Midwestern states. The Chicago office is at 3909 Field Building, 135 S. LaSalle St.

Mr. Bright was for almost five years a salesman for P. F. Collier & Sons Corp. in Los Angeles. Following a short term of service as a gunsmith with Knobtown Gunshop, Lees Summit, Mo., he joined Ex-Cel Tool Die & Engineering Co., Kansas City, Mo., as a machinist.

Three APMEWS Replaced a Big Room Full of Flat Screens in Bond Paper Mill

"Apmew centrifugal pulp cleaners & screens have now been installed and are working very satisfactorily." Centrifugally cleaner, more salable paper is being produced for big profits.

Occupy 10 feet by 30 feet—SAVE 81 feet by 96 feet



APMEW, Inc., P. O. Box 1, Glens Falls, N. Y.

Alvin H. Johnson & Co.

INCORPORATED

Consulting and Designing Paper Mill Engineers

415 LEXINGTON AVENUE NEW YORK 17, N. Y.

PAPER MILL DESIGN PROCESS ENGINEERING POWER PLANTS

STRUCTURAL AND ARCHITECTURAL DESIGN

REPORTS APPRAISALS ESTIMATES AND SURVEYS

POWELL has high pressure

high temperature valves in stock for quick delivery

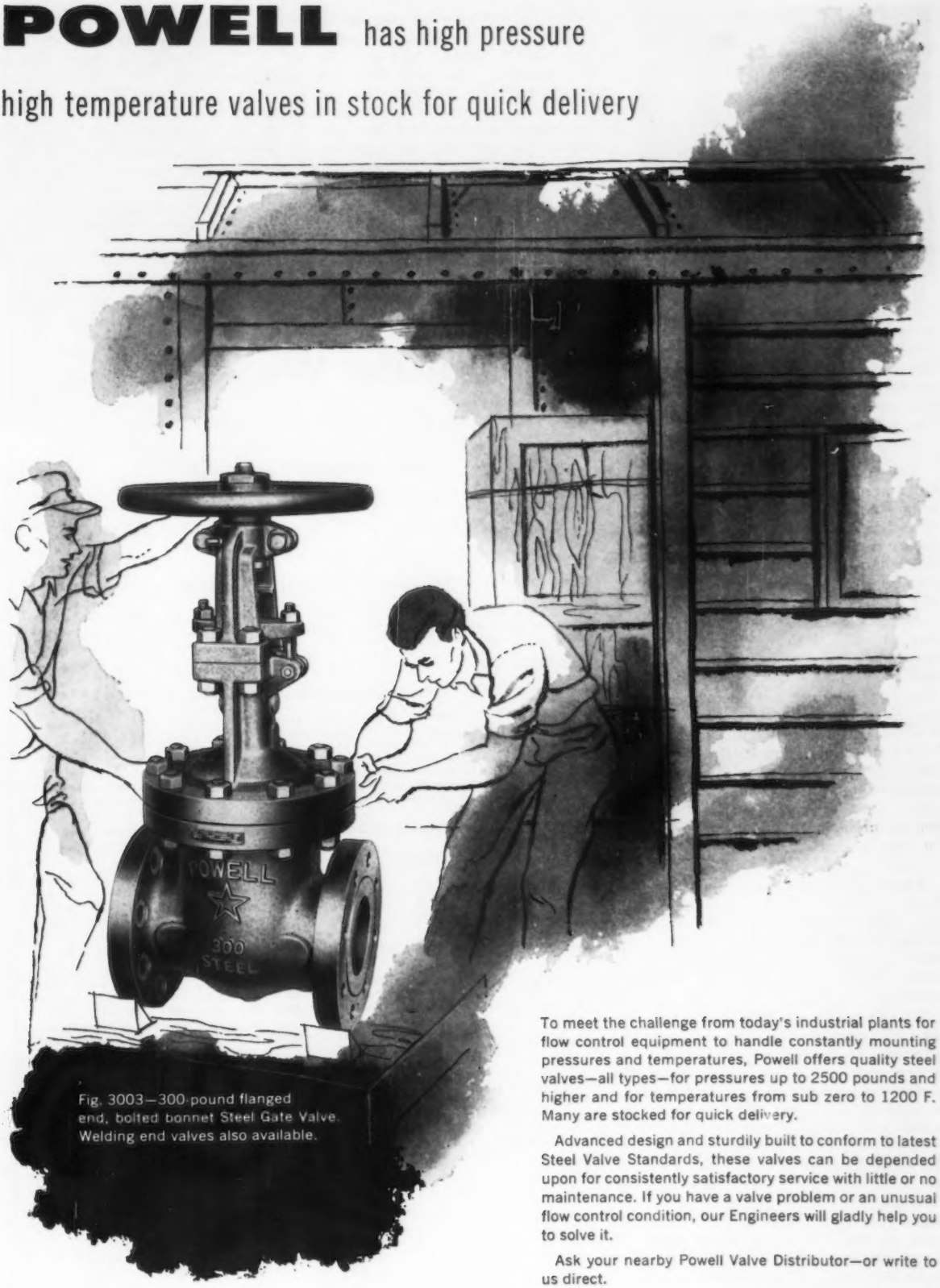


Fig. 3003—300-pound flanged end, bolted bonnet Steel Gate Valve. Welding end valves also available.

To meet the challenge from today's industrial plants for flow control equipment to handle constantly mounting pressures and temperatures, Powell offers quality steel valves—all types—for pressures up to 2500 pounds and higher and for temperatures from sub zero to 1200 F. Many are stocked for quick delivery.

Advanced design and sturdily built to conform to latest Steel Valve Standards, these valves can be depended upon for consistently satisfactory service with little or no maintenance. If you have a valve problem or an unusual flow control condition, our Engineers will gladly help you to solve it.

Ask your nearby Powell Valve Distributor—or write to us direct.

THE WM. POWELL COMPANY DEPENDABLE VALVES SINCE 1846 CINCINNATI 22, OHIO **world's largest family of valves**

LEFT TO RIGHT are: R. K. Carty, Canada Iron's vice president and general manager; J. C. Wallace, Walworth president; and R. Lyle, Canada Iron's vice president, sales; completing final negotiations for the Walworth-Canada Iron joint operation.

The Walworth Co., New York, has announced an exclusive licensing arrangement with Canada Iron Foundries, Ltd., Montreal, for the manufacture and sale in Canada of the Walworth industrial line of valves including bronze, iron, steel, plastic and lubricated plug valves.

John C. Wallace, Walworth president, and T. F. Rahilly, chairman and president of Canada Iron, stated that this new combination was brought about by the increased demand for the Walworth valve in Canada plus the mutual desire to utilize more fully Canadian manufacturing facilities and personnel for Walworth products sold in Canada. In recent years Canada Iron has handled a limited number of Walworth valves for sale in Canada.

Ames-American Co., Woonsocket, R. I. (formerly American Wringer Co.), announces that after 90 years in its present location, it plans to move its plant from Woonsocket to North Easton, Mass., in the near future.

The company manufactures rubber-covered rolls. The company has outgrown its Woonsocket plant. Industry now requires larger and heavier rolls, which necessitate a corresponding increase in floor area and capacity of handling equipment.

The North Easton plant is a one-story building of modern design, 600 feet long, owned by Ames Shovel and Tool Co., the parent company of Ames-American. The building is located on the NY NH & H Railroad for convenient rail shipments. For truck deliveries, it is one mile from Route 138, 25 miles from Boston and Providence, and 4 miles from Brockton and Stoughton, Mass.

Necessary construction changes to the building are being made. A giant 30-ton Gantry crane, covering the entire working area, and new roll making equipment will expedite the building and shipping of the largest rolls used in industry. Mr. Post emphasized the fact that the move to North Easton will be made gradually so that no interruption occurs in serving customers. The improved modern facilities of the North Easton Plant mark another forward step in expansion program.

Allis-Chalmers Manufacturing Co. announces the appointment of J. M. Duncan as manager, industries group sales, Washington office, and of B. G. Camp as manager of the Atlanta district. Mr. Duncan, who had been manager of the Atlanta district since 1956, succeeds W. P. Bell, recently named sales manager, small, medium and marine units, Allis-Chalmers steam turbine department.

Mr. Camp had been sales representative in the Charlotte district since 1946.

Mr. Duncan and Mr. Camp are graduate electrical engineers, the former of Duke University and the latter of North Carolina State.

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Sept. 12	Sept. 19	Sept. 26	Oct. 3	Oct. 10
1959	78.0	98.5r	97.1r	97.0r	98.5
	Sept. 13	Sept. 20	Sept. 27	Oct. 4	Oct. 11
1958	92.0	92.2	92.1	90.2	91.6

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	87.8	90.5	93.2	94.4	95.3	95.6‡	84.6‡	96.0‡	92.3‡	—	—	—	—
1958	86.9	89.5	89.5	88.4	87.2	87.2	76.3	89.6	86.5	91.6	90.4	83.1	87.1

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1952	1953	1954	1955	1956	1957	1958	1959
Year to Date	90.4	93.2	91.5	94.9	98.4	91.1	85.9	91.6
Year Average	88.6	92.3	91.6	94.0	97.9	90.9	87.1	—

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Sept. 12	Sept. 19	Sept. 26	Oct. 3	Oct. 10
1959	76	98	97	97	98
	Sept. 13	Sept. 20	Sept. 27	Oct. 4	Oct. 11
1958	97	95	94	95	95

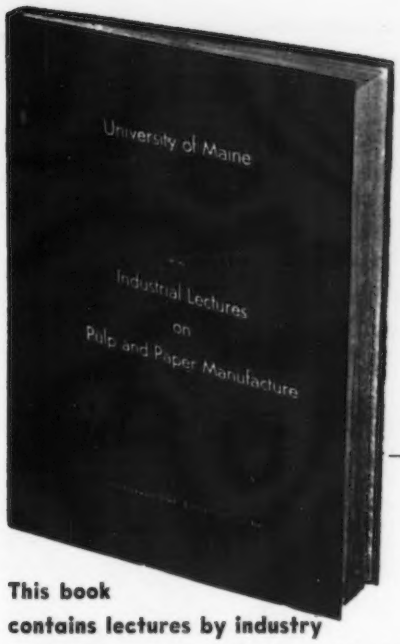
COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	89	94	95	94	96	96	83	97	92	—	—	—	—
1958	84	86	87	84	85	86	76	93	90	95	93	77	86

† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Oct. 10, 1959	LAST WEEK ENDING Oct. 3, 1959	CUMULATIVE TO DATE Jan. 1 to Oct. 10, 1959 incl.
% Activity	98%	97%	93%
TOTAL	331,221	331,401	12,372,419
Liner	122,606	120,714	4,295,214
Corrugating Material	51,413	49,992	1,881,501
Chip & Filler Board	4,607	4,727	201,641
Total Containerboard	178,626	175,433	6,378,356
Folding	58,165	56,871	2,219,404
Set-Up	14,424	13,618	472,880
Special Food Board	28,432	30,610	1,116,914
Other	51,574	54,869	2,184,865
Total Boxboard	152,595	155,968	5,994,063
Total Orders			
Received	376,005	363,714	
Unfilled End of Week	570,331	532,006	



Industry specialists authored this practical textbook on pulp & paper production...

University of Maine professors edited it...

Now the publishers offer it to pulp and paper mill men at reduced price.

The *University of Maine Lectures*, Series II, Contains 373 pages of up-to-date material covering a broad field in both pulp and paper making and including many fine illustrations and diagrams. The book was edited by Professors Lyle C. Jenness and John Lewis of the University of Maine.

The *Lectures* can be used as a textbook to train foremen and to orient engineers entering the field. Executives, superintendents, engineers and chemists will also find this book invaluable. Every mill should have one or more copies for quick reference to provide figures, process details, and information indicated by subject file at left.

Now, you can buy this book, bound in cloth with gold lettering on cover, for the price of only $5.00, postage prepaid.

To be sure you get your copy, use the coupon below, and DO IT TODAY.

This book contains lectures by industry authorities on the following subjects:

PULP SECTION

The Structure of Wood
Chemistry of Cellulose and Wood
The Wood Supply
Preparation of Wood
The Wood Room
Manufacture of Groundwood
Mechanical Pulping
Grinders and Grinding
Cooking Acid Preparation in the Sulfite Process
Sulfite Pulping Sulfur Dioxide Preparation
Sulfite Acid Preparation
Sulphite Pulp Acid Making Systems
Cooking Sulphite Pulp
Sulfite Pulping
Neutral Sulfite Semi-Chemical Pulping
Soda Pulping
Kraft Pulping
Sulfate Recovery Units
Chemical Recovery Unit
Peroxides
Peroxide Bleaching
Chlorine Bleaching
Corrosion-Resistant Metals for Pulp and Paper Industry
Application of Chemical Engineering To Pulp and Paper Technology

PAPER SECTION

Waste Paper, Its Collection and Usage
Facts Concerning the Waste Paper Industry and its Relationship to Pulp in the Paper and Paperboard Industries
Beating and Refining
Stock Preparation
Fillers and Loading
Paper Fillers
Starch Sizing of Paper
The Dyeing of Paper
Coarse Papers Bag and Board
Coarse Papers
Sanitary Tissues
Instrument Applications in Pulp and Paper Mills
Fourdrinier Paper Machines—Wet End
Paper Machine—Wet End
Fourdrinier Paper Machines—Dry End
Paper Machine Drive Fundamentals
Drying Theory and Practice
Paper Coating
Paper Testing and Specifications
Paper Converting
Finishing and Converting
Graphic Arts

LOCKWOOD TRADE JOURNAL COMPANY, Inc.
49 West 45th Street, New York 36, N. Y.

☐ YES, you may send me, postage prepaid, a copy of the University of Maine Lectures on Pulp and Paper Manufacture, Series II, at the price of $5.00. Remittance with order.

Name _____ Position _____

Company _____ City _____

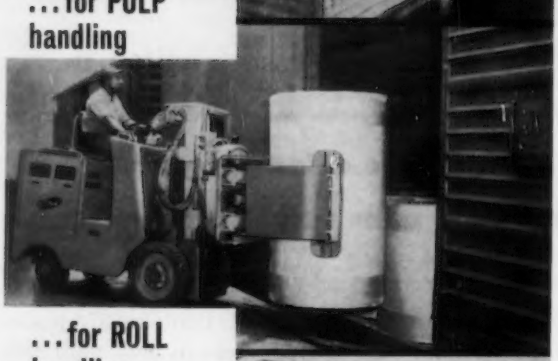
Address where book is to be shipped, postpaid _____

☐ Check enclosed

In Paper Mills

ELPAR Trucks

...for PULP handling



...for ROLL handling

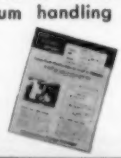
...for handling Packaged Stock

Operate for ⅓ the Cost!

• On handling jobs like these, and scores of others like them, ELPAR trucks have chalked-up a remarkable record for low cost operation. Reduced maintenance . . . economical electric power . . . outstanding dependability are the reasons.

A complete line of fork and platform trucks, backed up by qualified experience in the application of trucks for paper handling jobs, assures maximum handling performance.

For complete details contact your local ELPAR representative, or . . . Send for this NEW Paper Handling Folder.

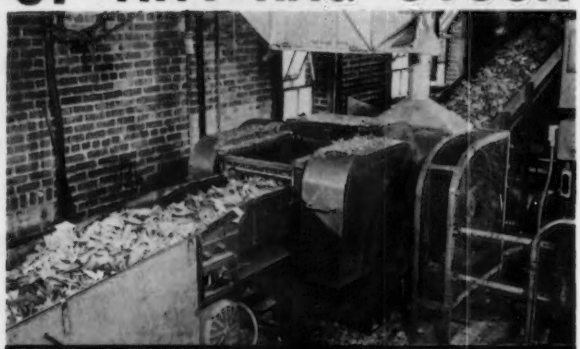


ELPAR

THE ELWELL-PARKER ELECTRIC COMPANY

4545 ST. CLAIR AVE. • CLEVELAND 3, OHIO

TAYLOR-STILES "GIANT" CUTTERS CUT TONS PER HOUR OF ANY RAG STOCK



NEW MILL CUTTINGS

Taylor-Stiles Rag Cutters, in tandem, at the plant shown, cut and then cross-cut 5 tons of mill cuttings an hour as a base material for paper to be formed into laminated sheets.

MIXED RAGS FOR ROOFING

The popular 520 rag cutter cuts tons of waste rags an hour. Apparently its only limit is the ability of the workers to keep the feed apron loaded. This particular machine has regularly taken pieces of metal, tin cans, buttons, and bottles mixed in with the rags without apparent damage.

For details of these machines write for folder No. 218

TAYLOR, STILES & COMPANY

10 Bridge Street Riegelsville, New Jersey

MAGNUS VALVES

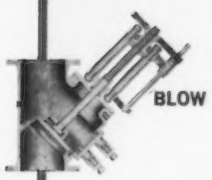
offer you

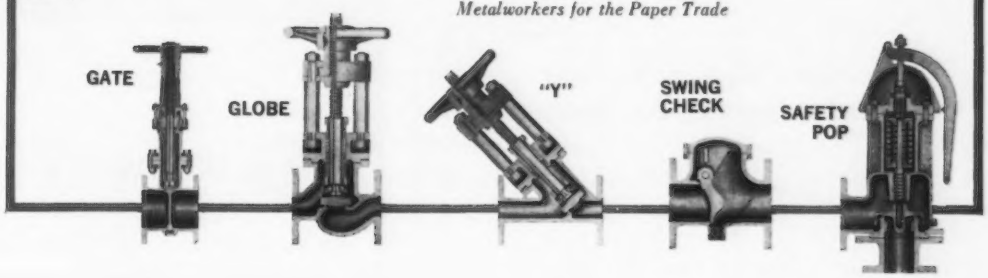
Extra Precision and Extra Performance for EVERY PAPER MILL JOB

For more than 50 years Magnus Metal has been specializing in custom-built valves for the paper-making industry. These valves are designed and built to meet your exact requirements, whatever they may be — for any of the following types: Blow, Gate, Globe, "Y", Swing Check or Safety Pop.

All Magnus valves are built with the extra precision that means extra dependability and longer, trouble-free service. Readily available replacement parts for all valves assure minimum down time and low maintenance costs. Describe your valve problem and let us give you our solution.

MAGNUS METAL CORPORATION
Subsidiary of **NATIONAL LEAD COMPANY**
Fitchburg, Massachusetts
Metalworkers for the Paper Trade





WISCONSIN...

..Producing Fourdrinier Wires
Exclusively for the Paper Industry for Over 60 Years.

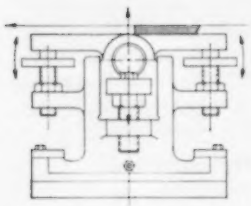
ONE OF THE LARGEST IN THE UNITED STATES
... and Still Growing!

WISCONSIN WIRE WORKS • APPLETON, WISCONSIN

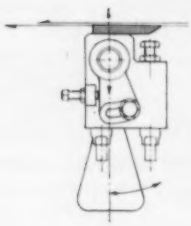
SANDY HILL

DEFLECTORS

sturdy - adaptable

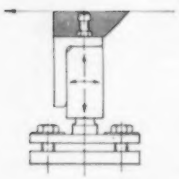


No. 1



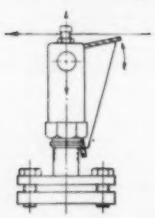
No. 2

Completely Adjustable



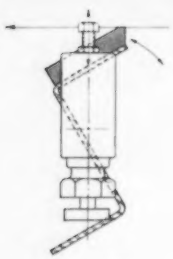
No. 3

Contact



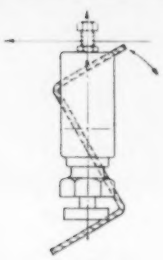
No. 4

Non-contact



No. 5

Contact

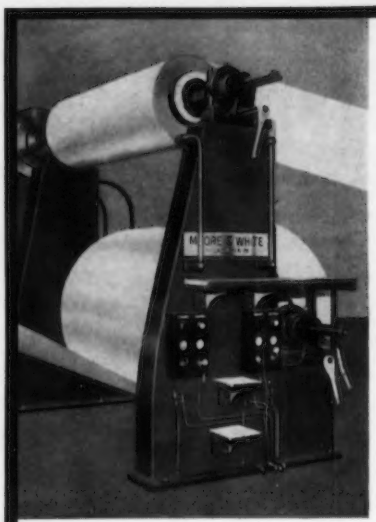


No. 6

Non-contact

Write for complete details

THE
SANDY HILL
IRON AND BRASS WORKS
HUDSON FALLS, N. Y.

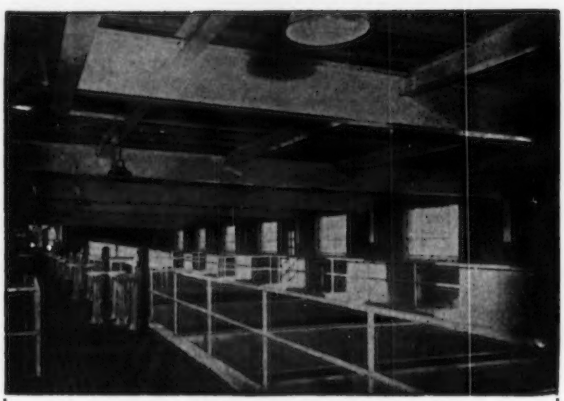


CUSTOM DESIGNED UPRIGHT REELS

THE MOORE & WHITE CO.

330 East Hunting Park Avenue, Philadelphia 24, Pa.

West Coast: Stephen Thurlow Co., 1912 Minor Ave., Seattle, Wash.



Concrete Gravity Air-Water-Wash type water Filtration Plant producing, at low cost, water with turbidity 0, color under 5 and iron 0.05 p.p.m. Fe.

OTHER PRODUCTS

Demineralizing Plants
Water Softening Plants
Pressure Filter Plants

and

All other types of water treating systems, including strainer valves, air wash systems, filter sand and anthracite beds and all filter repair and replacement parts. Over 50 years experience building new and modernizing old water treatment plants.

Write for FREE Bulletins

HUNGERFORD & TERRY, INC.

CLAYTON 4, NEW JERSEY

PAPER TRADE JOURNAL CLEARING HOUSE

Help Wanted

PAPER MEN

$5,000 to $50,000

SALES • PRODUCTION • TECHNICAL

Finding and landing THE ONE BEST JOB requires sound analysis, careful planning, proper contacts and skillful negotiation.

Paper men ourselves, and the only recognized professional specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing THE SPECIFIC SITUATION that most exactly fits the needs of each individual we serve.

If you seek to better yourself, and your performance to date entitles you to our endorsement, we can and will help you. Contact us in absolute confidence for information regarding procedure.

GEO. M. SUNDAY & ASSO.

PERSONNEL CONSULTANTS TO THE PULP, PAPER & ALLIED INDUSTRIES

6 East Monroe, Chicago ANdover 3-1970

Help Wanted

HELP WANTED

Young man thirties, some sales experience wood-pulp and paper, old established New York Paper and Pulp House. Send resume background, experience and salary expected. All replies confidential. Address Box 59-282 care Paper Trade Journal.

0-26

BETTER POSITIONS

$6000 to $35,000. Want a substantial salary increase, more opportunity or different location? This national 48 year old service connects you with best openings. You pay us only nominal fee for negotiations; This we refund when employer pays placement fee. Present position protected. In complete confidence, write for particulars. R. W. Bixby, Inc., 563 Brisbane Bldg., Buffalo 3, N. Y. 0-26

Plant Maintenance Engineer

Applicant must have engineering degree and some experience in plant maintenance in a paper mill. Salary open. Write K. L. Sovereign, Waldorf Paper Products Company, St. Paul 14, Minnesota.

0-26

TO A TOP-FLIGHT PAPER & PULP TECHNOLOGIST

Dear Mr. Expert:

We have an opening in our Technical Service group and are having a time filling it. You may be just the man we're seeking. The qualifications are exacting. But they must be so because of the unusual nature of our business. Here's what we require: a man with—

- *Technical experience in paper pulps . . . plus some background in cellulose chemistry.
- *Specific experience in paper making and stock preparation.
- *About 10 years experience and specific training either in pulp and paper technology or chemical engineering.

That's a tall order, we know, because there are possibly only a few dozen such qualified men in the U.S. and Canada. We're sorry, but we just can't settle for less.

Our Technical Service representatives are based at our new, modern offices at New York. However, they spend close to one-third of their time in travel. Too, this position will involve work in other fibrous end uses. Thus it would be helpful were the applicant to have had experience in either the research or production of such cellulosics as film, fiber, ethers, esters, rayon and acetate.

Of course Rayonier offers all the usual security benefits plus the always-present opportunity to advance.

If you meet our primary qualifications and would like to join an aggressive research-oriented company with an exciting future, write in complete confidence to:

Dr. S. Earll Church, Manager
Technical Service
Rayonier Incorporated
161 East 42nd Street
New York 17, New York

We assure you an early reply. However, if you're happy where you are, but know of a qualified man, perhaps you will bring this message to his attention. It would be greatly appreciated!

RAYONIER NATURAL RESOURCES CHEMISTRY

0-26

GIBBS-BROWER CO., INC.

10 Depot Plaza, White Plains, New York
Telephone—Rockwell 1-1130

BRANCHES:

5270 E. Wash. Blvd. Los Angeles 22, Cal.
903 Danforth Burlington, Ontario
400 Washington Building Madison 3, Wisconsin

PRINTING PRESSES

1—54" & 1—49" 1-color Gravure Presses
1—50" 1-color Tailprinter
1—48" 4-color Cottrell Heinrich Press. 3—Flexo, 1—Gravure
1—42" 4 color Kidder Standard Flexographic Press
1—40" Wide 5 Unit Koenig & Bauer Rotogravure Press
1—33" 6-color Cottrell-Heinrich Flexo
1—18" 2-color Potdevin Oil Ink Roll to Roll Press
2—18" 3 & 4 color Martini Flexo
1—10" 4-color Roto Press.
2—9" x 12" 2 color New Eras

POWER PAPER CUTTERS

Seybolds: Dayton: 56" & 35"; 20th Century: 64", 54" & 38"; Holyoke: 55"; 10Z: 65", 50", 44"; 7Y: 34"; 3Y: 32"; Oswegos: 36"; Dexters: 50", 44" & 32"; C & P: 44"; National: 44".
1—84" Seybold Precision

CAMACHINES

1—96" Cameron #18
1—82" 10-10
1—72" 10-10A
1—72" 10-11
1—72" Shear Cut, Type 10-04-8, 40" diam. rewind
1—62" Type 6 Stanford Web Guide & Variable Speed Drive
1—62" 40-1-AF
1—62" Type 42, for small rolls
1—52", & 1—42" Model 24-7.
1—42", 50" & 62" Type 6
1—55" & 1—65" Type 10

OTHER SLITTERS

1—106" Langston (60" Diameter Rewind)
1—82" Langston Type B
1—60" Langston Type A
1—60" Langston Type AA
1—60" Inman With Reeves Drive
1—52" Meisel (Shear-Cut)
1—50" & 1—60" Knowlton Board Slitter (Heavy Duty)
1—50" Kidder Mod. SLN Shear-cut
1—40" Langston "Type A" (Shear-Cut)
1—36" Kidder SLN (Shear Cut) Fully equipped for converting adding machine & teletype rolls.
2—24", 1—30", 1—36" & 1—40" Kidder S.L. Shear cut
1—62" Johnstone

MISCELLANEOUS MACHINES

1—79" Moore & White Sheeter with 10 roll backstand and motor
1—55" Beck CCSH A-5 Angle Sheeter
1—55" CSH Beck Sheeter with automatic layboy
1—45" CCSH-5 Beck Jogger Table
1—45" CSH Beck Sheeter, Jogger Delivery
1—36" Model CSHD Beck
1—36"-45" and 1—55" Globe sheeters
2—Oliver Caddy Carton Wrappers
1—88" Hamblet Single Sheet Cutter with Layboy
Hamblet Sheeters—32", 44", 48", 64", 104" & 90" Duplex
2—60" Perkins Squeeze Roll Waxers
1—Beasley French Bag Machine. Range: (2" x 2¾" to 6" x 13⅜")
1—Potdevin Model 110-L Cello Bag Machine
2—Potdevin (Model 111-S) F & S Cello Bag Machine, Electric Eye
1—#4 & 1—#5 Potdevin Diamond Shaped Bottom Sack Machines
2—Matador Model #26 & #100 Bag Machines
2—B-10 Bagprint Bag Machines
1—Model-C Cellophane Roto Bag Machine
1—#2CS Weber Cello Pouch Machine
1—Weber Model "CN" Cellophane Satchel Bottom Bag Machine
1—Lawton Model "A" Jr. Toilet Roll Wrapping Machine
1—72" Paper Converting Hard Roll Paper Towel Converter
1—Mercury Hot Paper Cut Machine
3—Seybold; 4—Post Die Presses 2—38" x 24", 48" x 31" & 59" x 32"
2—Sheridans 66" x 44" & 44" x 22"
1—V-Shape 6 oz. Paper Cup Machine
1—Potdevin Duplex Unit for #103 Potdevin Bag Machine
1—27" x 44" Dietz Single-Fold Towel Interfolder
1—New Hudson Sharp No. 10-T Rotary Towel Interfolder
1—Hudson-Sharp C-Fold Towel Machine

0-26

ENGINEERS AND DRAFTSMEN

MECHANICAL ENGINEERING SUPERVISOR

Graduate Mechanical Engineer to age 40 to serve in supervisory capacity in process piping, heating, ventilation, and mechanical design work. Paper mill experience required, with previous supervisory experience desirable. Must have ability to deal effectively with others.

PAPER MILL ENGINEER

Graduate Mechanical Engineer to age 40 with at least five years experience in paper mill design or maintenance.

CHEMICAL ENGINEER

Graduate Chemical Engineer to age 40, with experience in sulphite pulp process. Experience in sulphate pulp and by-product recovery processes desirable but not essential.

POWER PLANT ENGINEER

Graduate Mechanical or Electrical Engineer to age 40 for power plant design and selection of equipment. Experience with turbo-generators and recovery equipment desirable.

GRADUATE ENGINEERS TO AGE 35 ALSO WANTED WITH AT LEAST TWO YEARS EXPERIENCE IN ELECTRICAL, PIPING OR STRUCTURAL DESIGN.

DRAFTSMEN

High School graduates or better for structural, mechanical, electrical, or piping layout. Age to 35 with minimum of three years experience.

These positions provide long-term opportunities. Company is located in eastern Tennessee, in the heart of the beautiful Tennessee Valley. Excellent recreational and residential facilities throughout the area. Very favorable year round climate. Located near Great Smoky Mountains, and short distance from Chattanooga and Knoxville, Tennessee and Atlanta, Georgia. Liberal salary program with periodic merit increases. Complete insurance, retirement and vacation programs are established. All applications will be treated in confidence. Interviews will be conducted in areas of qualified applicants, or selected candidates may be asked to visit offices at Company expense.

Reply immediately, submitting summary of experience and qualifications to:

BOWATERS
ENGINEERING AND DEVELOPMENT INC.
INDUSTRIAL RELATIONS DEPARTMENT
CALHOUN, TENNESSEE

TF

EXECUTIVE VICE PRESIDENT

Executive Vice President for a small but nationally known paper and plastic packaging company in the South. He will be responsible for improving organization, plant operations, cost controls, administration, etc. Production experience in paper container or plastic packaging fields desirable. Five figure base salary is supplemented by an attractive incentive plan and fringe benefits.

Write in confidence to Box 59-304 care Paper Trade Journal.

0-26

KRAFT PAPER MILL MANAGER

Mature, experienced specialty kraft paper maker with technical education or equivalent background wanted to manage high quality 2-machine Midwestern kraft paper mill located near a large city. Mill uses 100% purchased pulp, mostly Scandinavian.

He should be able to operate virtually independently with a minimum of supervision. This is an outstanding opportunity for the correct man. Remuneration, including pension and fringe benefits, depend upon experience and potential. All replies will be held confidential.

Please send full particulars including age, education, past and present experience, grades run and any other appropriate data to

Address Box 59-296 care Paper Trade Journal.

BARGAINS

IMMEDIATE DELIVERY

1—86" Farrel 8-Roll Calender Stack. A. F. Bearings. Full set of Doctors.
1—8" Pusey & Jones 7-Roll Calender Stack.
1—30" Dia. x 130" Face Farrel Roll Grinder., Complete.
1—5' x 86" Pusey & Jones Yankee Dryer.
1—92" Langston Winder equipped with both score and shear cut slitter devices.
1—86" Warren Winder Complete. Recently rebuilt with new drums and new A. F. Bearings and Housings.
1—110" Pusey & Jones 2-Drum Winder. A.F. Bearings.
1—84" Kamyr Machine. 75 Ton per day.
10—48" x 150" Pusey & Jones Dryers.
7—36" & 72" Pusey & Jones Dryers.
1—E. D. Jones Majestic Jordon No. A-482. S.S. Fillings.
1—74" Seybold Trimmer & Cutter Z-12.
1—45" Seybold Trimmer & Cutter with 5 H.P. 220/440 Volt Motor. Rebuilt.
1—42" Dia. & 110" Face Pope Reel.
1—25" Dia. x 156" Perforated Face Sandusky Suction Couch. Complete.
1—22" Dia. x 138" Perforated Face Sandusky Suction Couch. Complete.
1—22" x 111" Vertical Size Press with Microrock and Rubber Rolls. A. F. Bearings with frame work. Pneumatically loaded.
1—24" x 102" Extractor Rolls. 20" Dia. Rubber Top Roll mounted with A. F. Bearings and Frame work. Spare Rolls.
1—22" x 96" First Press with Microrock Roll and Rubber Roll.
1—22" x 110" Press with Microrock Roll and Rubber Roll.
1—10-Knife Carthage Chipper with A. F. Bearings.
1—A.P.P. Rotary Centrifugal Pulp Screen, 40" Dia. x 42" Face. Serial #1274227.
1—#3A Bird Screen. S.S. Plates.
1—Hudson Sharpe Toilet Tissue Converting Machine. Serial #2123.
2—Packer 12-Plate Flat Screens. S.S. Bodies #.22 S.S. Plates. Less than 5 Years Old.
1—36" x 96" Saveall, Rubber Couch, S.S. Vat, A.F. Bearings.
1—Hummer Vibrating Screen.
1—Seybold Knife Grinder. Size G. 84" Table. Serial #4X802.
1—Sandy Hill Sulphur Burner. Complete.
1—54" Dia. x 48" Face Valley Iron Tub Beater.
1—53" Dia. x 66" Face Dilts 2000-lb. Iron Tub Beater with S.S. Hood.
16—Beater Rolls and Stands, Various Sizes.
5—Triplex and Duplex Pumps, Various Sizes.
1—DeZurick Consistency Regulator. Complete. One year old, never used.
1—8' x 10' Oliver Continuous Filter. Steel Tub.
1—100 H.P. Terry Turbine, Type G, 3615 RPM, 250 lbs. Steam Pressure. Back Pressure 35 lbs. Fully automatic with Terry Speed Reducer.
1—No. 2 Jones Pulper. A.F. Bearings. Spare Worm.
1—250 H.P. Ingersoll-Rand Diesel Engine Generator Set—G.E. Generator, 150 KW, 480 Volts, 720 RPM.
3—75 KVA G.E. Spirakore Transformers, Type HS, Class OA, 2400/4160 Y Primary to 120/240 Secondary.
1—60 H.P. G.E. Gear Motor, T.E.F.C. 440 Volts, 1730 Max./427 Min. RPM, 4.15 to 1 Ratio.
1—15 H.P. West. Gear Motor, T.E.F.C. 220 Volts, 87 RPM.
1—7½ H.P. West. Gear Motor, T.E.F.C. 550 Volts, 1165 RPM to 29 RPM.
1—7½ H.P. G.E. Gear Motor, T.E.F.C. 220/440 Volts, 1738 RPM, 9.2 to 1 Ratio.
1—Horton Clutch, AF. Bearings.

1000 Electric Motors from ¼ H.P. to 600 H.P. in Stock

The above is but a small part of the inventory we carry. We can furnish you with almost anything in the line of paper mill, electrical and machine shop equipment.

Write—Wire—Phone For Your Needs

RUDERMAN MACHINERY EXCHANGE
GOUVERNEUR, NEW YORK
Telephone 333-324

TF

FOR SALE

BARKING DRUM
1—12 ft. diameter x 45 ft. long

BEATERS
2—1500 lb. rag beaters, Valley Iron, bandless rolls, 54" x 48", cast iron tubs

CALENDER STACKS
1—3 roll 84" calender stack.
1—4 roll 72" Calender Stack. (Extra heavy duty).
1—5 roll 82" face.
1—5 roll 86".
1—7 roll, 84" face.

CHIPPERS
1—96" Murray 4 knife Chipper—anti-friction bearings
1—84" 10 knife Carthage Chipper. Anti-friction bearings, with motor.
24—Chipper Knives 15⅞ x 8¼, 2 slot.

COATER
1—42" Extruder Coater, new

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
1—Williams Hammermill
1—Jeffrey Shredder

CYLINDER MOLDS
2—36" diameter x 100" face, anti friction bearings
5—36" diameter x 75" face, with couch rolls
3—42" diameter x 106" face
1—30" diameter x 72" face.
1—36" diameter x 82" face
3—36" diameter x 90" face, 18" diameter couch rolls.
2—60" dia. x 170" face

DIGESTERS
1—10' high x 5' dia. High pressure vertical digester.

DISINTEGRATOR
1—Shartle 8" disintegrator (new) with 125 horsepower induction motor. (totally enclosed)

DRIVES
1—Rice-Barton hypoid enclosed drive, 4 to 1 ratio.
1—#6 Reeves vertical—anti friction bearings, totally enclosed.
1—Sandy Hill right angle 50 H.P. (4.75 to 1).
1—Jones 21 H.P., ratio 10 to 1 (enclosed angle drive)
1—#4 Reeves Drive
2—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 H.P.)
1—5 H.P. Reliance Drive, complete with starting equipment, like new.
1—Agitator drive
1—400 h.p.—Westinghouse Drive

DRYERS
2—48" x 60" face with frames, gears and bearings
1—48" x 96" face
20—48" diameter x 48" face with bearings.
4—24" diameter x 80" face, Lukens High Pressure Dryers, anti friction bearings.
1—28" diameter x 84" face
2—30" diameter x 40" face with bearings
2—30" diameter x 48" face with bearings.
2—48" dia. x 52" face with frames, gears, bearings
1—36" diameter x 44" face
4—36" diameter x 76" face
5—36" diameter x 84" face and gears
1—16" diameter x 54" face (steel)
6—48" diameter x 130" face.
2—Calender Dryers, bronze, 36" x 128", with frames, gears & necessary rolls to make up the unit.

EMBOSSING CALENDERS
1—3 roll 57" Embossing Calender
1—3 roll 51½" Smoothing Calender
1—2 roll 90" Smoothing Calender
1—43" 3-Roll Embossing Calender.
1—62" 2 roll Embosser.

FILTER
1—Dorr-Oliver Filter, 3 ft. dia. x 6 ft. face, stainless steel construction, with pump.

FLAT SCREENS
1—8 Plate "Packer"
1—12 Plate "Packer"

FRAMES
Beloit Heavy Duty Dryer Frames for 100 Dryers (42" Dia.) 4 Stack. Immediate Delivery.

FOR SALE

HOGS
2—Mitts Merrill Type 15 C.F.

JORDANS
1—Jones Standard, new spare tackle, with 75 h.p. motor
1—Noble & Wood Mammoth Senior, anti friction bearings

LABORATORY EQUIPMENT
1—4" face x 36" diameter Saveall
1—12" x 12" Sheet Mold
1—Washer for 5 lb. Beater
1—24" Saveall, stainless steel
1—20" Fourdrinier Wet End & Press Section
1—Bauer-McNett Fibre Classifier
2—8" x 8" Valley Sheet dryers
1—12" x 12" Valley Sheet dryer
1—6" diameter Hydraulic Press
1—Experimental Digester (High Pressure)
1—5 lb. Valley Beater.
1—15 lb. E. D. Jones Beater
1—8" x 8" Valley Hydraulic Press
1—Williams Freeness Tester, with Timer
1—Greene Freeness Tester
2—Cady Micrometers
1—High speed Jordan, anti friction bearings
1—Noble & Wood Baby Jordan, anti friction bearings, new 1957, with motor
7—Mullen Testers
1—Williams Centrifuge, motorized

LAMINATING MACHINES
1—52" face Waldron Laminating Head
2—84" Asphalt laminators.

LOG SPLITTER
1—Carthage 4-way Hydraulic Log Splitter

MISCELLANEOUS
1—#1 Miami Selectrap

MOTORS
1—60 h.p. upright induction motor.
1—30 h.p. upright induction motor
5—25 h.p. Westinghouse, totally enclosed, ball bearings, 705 r.p.m.
1—40 h.p. Westinghouse, totally enclosed, ball bearings, 880 r.p.m.

PRESS ROLLS
2—Chilled iron, chrome plated 9" x 72"
1—Chilled iron, chrome plated 12" x 100"
1—Chilled iron, chrome plated 10" x 74"

PUMPS
1—Economy Fan Pump, 6000 g.p.m., 20' head, 50 h.p. motor.
1—Morris 10,000 g.p.m. 25 ft. head (all bronze)

REELS
1—200" Beloit Pope Reel, 72" finished roll
1—86" 2 bowl reel.
1—84" 3 bowl revolving reel.
1—100" Rice Barton 2 bowl Reel, heavy duty.
1—123" 3 bowl Revolving Reel
1—134" 2 drum
1—72" Downingtown Reel, 2 bowl.

REFINERS
1—Dilts Classifiner, practically new
1—Rice Barton Dynofiner, details on request.
1—12" Wiener Refiner, with 200 h.p. motor
1—double disc Bauer Refiner, with 2-150 h.p. motors
1—double disc Bauer Refiner, with 2-50 h.p. motors.

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
4—#2A Bird Rotary Screen, copper vats.
7—Trimbey, Senior Knotter Screens
1—#2A-50 Bird, copper vat
2—APMEW Rotary Pulp Screens.

SAVEALLS
1—24" Continuous Saveall, stainless steel
1—LaMorte, 48" diameter x 84" face cylinder mold.
2—Savealls, cylinder molds, 42" diameter x 106" face, brand new vats.

SCREEN PLATES
Bird Rotary screen plates.

SHEETERS
1—60" Hamblet with layboy
1—132" Hamblet heavy duty duplex sheeter, anti-friction bearings throughout, including layboy and backstand.
1—84" Hamblet, duplex, back stands.

FOR SALE

SHREDDER
1—16" "Swift" Paper Shredder

SLITTERS & WINDERS
2—26" Cameron Type 9
1—42" Cameron Type 24-3A
5—42" Cameron Type 6
1—42" Cameron Type 40-2
3—50" Cameron Type 6
3—52" Cameron Type 9.
1—86" Two Drum Moore & White 50" diameter rewind.
1—96" 4 drum Moore & White winder
1—102" Cameron Type 18, 60" diameter
1—122" Cameron Type 18, 60" diameter, anti-friction bearings
1—64" Waldron, shear cut

SLITTING DEVICE
84" Quick change slitting device shear cut, complete, practically new.

STOCK PUMP
1—10 x 20 Shartle Triplex

STRAINER
1—Elliott Twin Strainer, Type R

SUCTION COUCH SHELL
1—Downingtown suction couch shell only, 127½" face 26" diameter

SUCTION COUCH ROLL
1—Beloit, 36" diameter x 246" face, SKF bearings.

SUCTION FELT ROLLS
1—Gilbert & Nash 122" face
1—Beloit Rubber Covered Suction Felt Roll 109 face x 20½" diameter.

SUCTION PRESS SHELL
1—14" diameter x 100" drilled face, suction Press Shell only.

SUPER CALENDER STACK
1—9 Roll 56"

TABLE ROLLS
22—Rubber Covered 10" diameter x 246" face
10—4" dia. x 130" face (will cut to size)
50—8½" diameter x 130" face, brass covered

THICKENERS
2—Iron End Vats with 36" diameter x 84" face Cylinder Molds and 20" diameter couch rolls, including spare cylinder mold and spare couch roll, all anti friction bearing equipped.

TOILET WINDERS
2—72" Hudson-Sharp (Surface type winder)

TRIMMERS
1—84" Seybold
1—36" Oswego

VACUUM PUMPS
1—H-3 Nash Vacuum Pump
3—#1 Nash Hytor vacuum pumps
1—#7 Nash Hytor vacuum pump with 75 h.p. synchronous motor.
2—Connersville, 14 x 20
2—#3 Nash Hytor
1—#4 Nash, with motor
3—L-4 Nash vacuum pumps
3—L-5 Nash Vacuum Pumps
4—#6 Nash Hytor (Bronze)

VATS
2—D. J. Murray Co. Vats, iron ends, for 42" x 120" cylinder molds, overflow and counterflow.
2—Brand new Downingtown Iron End Vats, copper lined, for 42" diameter x 112" face cylinder molds. Will cut down to your size.

VATS AND MOULDS
5—Stainless Steel Vats, with 36" Dia. x 100" Face Cylinder Moulds, anti-friction bearings, 2 Spare Cylinder Moulds, all in excellent condition.

VIBRATING SCREENS
1—Hummer electric Vibrating Screen, stainless steel
1—Selectro 2 stage, 5 ft. x 10 ft.

WET END
1—Complete 2 cylinder Rice Barton, 128" trim

WET MACHINES
1—84" Kamyr Complete Wet machine

YANKEE DRYER
1—12 ft. diameter x 181½" face

Paddy Ross, Pres.

J. J. ROSS COMPANY

Ben Kurs, Treas.

377 Frelinghuysen Ave. Tel—Bigelow 3-3720 Newark 12, N. J.

RESEARCH AND TECHNICAL PERSONNEL

Nekoosa-Edwards Paper Company, a leading producer of business papers, has the following positions available. These are responsible positions and offer challenging opportunities.

Living conditions are excellent. Company benefits include medical coverage, life insurance and an excellent retirement program. Replies should include personal, educational and work background and will be held confidential.

RESEARCH CHEMIST will be responsible for development of new products, improvement of existing products and development of new methods for testing experimental products. Applicant must have creative ability. A degree in chemistry is required. Experience in the paper industry is desirable but not required.

RESEARCH ENGINEER will develop new products and improve existing products. He will assist in the design, evaluation and installation of new or improved processes and equipment. Applicant must be a graduate in chemical engineering. Experience in the paper industry is desirable but not required.

ANALYTICAL CHEMIST will perform chemical analyses of raw materials, processing materials and pulp and paper. He will evaluate existing procedures and introduce new analytical procedures. This position requires a careful and precise worker with interest and ability in analytical techniques. Must be a graduate in chemistry and be familiar with modern analytical equipment and methods.

PROCESS ENGINEER will be responsible for technical investigations in modern bleached kraft pulp and paper mill leading to improvement of process efficiency and product quality. He will supervise technicians in mill trials and process investigations. This position requires a young aggressive man with an interest in manufacturing operations. He must be a graduate in chemical engineering or pulp and paper. Experience in the industry is desirable.

E. P. Surprison, *Employment Director*

Nekoosa-Edwards Paper Company

Port Edwards, Wisconsin 0-26

SENIOR PROCESS ENGINEER

For nationally known manufacturer of industrial and building products.

Require several years responsible charge of engineering applicable to processing of fibers to structural, insulation, acoustical and like products. Registered professional engineer desired with imagination tempered with experience.

This new position is with Central Engineering Department in growth Company.

Your resume, including salary requirements, will be reviewed in confidence and acknowledged.

Box 59-300 care Paper Trade Journal. N-16

CHEMIST

For applications research on chemicals for new bleaching procedures and new or improved pulping processes. Challenging opportunity to apply theoretical and practical background for development of new and improved methods and for solving important customer problems. Includes research laboratory work and contacts with customers. Prefer applicants with 1 to 10 yeas experience in paper or cellulose chemistry.

Complete benefit plans. Location in Central New York near the attractive Finger Lakes Area, the Adirondack Mountains, and the Thousand Islands.

Send detailed resume indicating salary requirement to:

Director of Research

Allied Chemical Corporation

Solvay Process Division

Syracuse 1, New York 0-26

HELP WANTED

Excellent future for man in 35 to 45 age group with a leading fine paper mill. Should have a degree in paper technology or chemical engineering, technical and operating experience, and be capable of taking over as production manager. Address Box 59-299 care Paper Trade Journal. N-2

RESIN CHEMIST—PAPER COATING

Exp. in casein or latex coating. Work with resins, functional or colored coatings helpful. Diversified, medium size company in eastern Pa. Salary fully commensurate with ability and experience. Write briefly. Box 59-303 care Paper Trade Journal. 0-26

BUY
U. S. SAVINGS BONDS

LOOK through the columns of the CLEARING HOUSE

PROCESS DEVELOPMENT SUPERVISOR

Recent promotions in our Technical Department have left an opening for a Process Development Supervisor. This work involves both pulp and paper and all applicants should have an appropriate technical education with five years experience. This is a good opportunity to gain supervisory experience along with professional growth with a progressive company. Salary commensurate with experience and ability. Write to **Personnel Department**

Riegel Paper Corp.

Carolina Division

Acme, N. C. 0-26

SALES REPRESENTATIVE

Paper Machine Clothing, For Mid-West

Leading manufacturer of paper machine clothing interested in a top quality man for sales in Mid-western states. Experience and close connections with paper mill personnel very important. Age range 30 to 40 preferred, salary and bonus basis. Apply giving educational background, work experience with paper industry, and relevant personal data to Box 59-290 care Paper Trade Journal. Replies held in strict confidence. 0-26

EXCELLENT OPPORTUNITY FOR

Technically trained men for market development of specialty and technical papers. Sales experience preferred, but not necessary. Must have ability to carry out contacts at all organizational levels.

Send resume to:

Personnel Department

P. H. GLATFELTER CO.

Spring Grove, Pa.

Phone—Spring Grove 3216

0-26

GRADUATE CHEMIST

Molded Fiber Plant in Northern California is interested in a chemist who will work directly under Chief Chemist. Applicants should state where educated, years of experience, if any, and salary desired. Reply to box 59-305, care Paper Trade Journal. 0-26

CONVERTING FOREMEN

Excellent opportunity to affiliate with modern, progressive concern. Applicants must be familiar with latest technical and mechanical aspects of paper conversion as well as direction of work force. Forward complete resume to Box 59-286 care Paper Trade Journal.

0-26

WANTED—Paper Mill Shift Boss for West Coast Newsprint Mill. Address Box 59-302 care Paper Trade Journal. N-16

Help Wanted

MASTER MECHANIC

Two machine specialty kraft paper mill with converting operations requires experienced working master mechanic. Company house available. Usual fringe benefits. Salary open. Location northern New England. Address Box 59-275 care Paper Trade Journal. N-9

WORKING FOREMAN wanted for Paper Mill located in New Jersey. Must be experienced on Guillotine and Rotary Sheeter.

Salary and Bonus

Reply giving full particulars to P. O. Box 387, Trenton, N. J. N-2

Situations Wanted

Paper Mill Supt. or beater room foreman wishes new position. Available immediately. Will go anywhere. Experienced on both fourdrinier and cyl. machines nearly all grade. Write Box 59.293, Care Paper Trade Journal. N-9

EXECUTIVE - WORK MANAGER

—in manufacture of boards & papers; their conversion; and film. Wishes change for challenging opportunity. Successful record in production; organization; labor relations, & development. Address Box 59-137 care Paper Trade Journal. O-26

Situations Wanted

Pulp and Paper General Superintendent, 41 years old, with 20 years of technical, operational and sales experience wishes to become a manufacturers representative calling on mills in the New York and bordering states area—working out of Watertown, N. Y. Address Box 59-291 care Paper Trade Journal. N-2

Paper exporter, manufacturer, converter

Young Scandinavian, commercial educated, well trained in paper & converting industries, degree from The Danish Graphic College, speaks fluent English, Spanish & German, seeks employment anywhere. Write Box 59-297 care Paper Trade Journal. O-26

Att. All Paper and Twine Mills

Experienced salesman seeks position with responsible mill. Successful record and knowledge of kraft, tissue, tape, twine, etc. Married—late car—$150 min. Address Box 59-298 care Paper Trade Journal. O-26

Wanted

WANTED

Experimental Paper Machine, either Fourdrinier or Cylinder. Also Stock Preparation Equipment. Box 59-301 care Paper Trade Journal. N-2

For Sale

RPM

16 FT. DILTS HYDRAPULPER

Batch Type rated 52 tons per days at 3% and 80 tons per day at 5%. C. I. Sectional Tub.

5 ft. dia. Impeller, Westinghouse, 125 h.p. motor, Shaw Electric Hoist. New drive. Installed 1954. Excellent condition as it was used on baled pulp only. Now in operation.

ROSS PAPER MACHINERY COMPANY
265 Passaic St., Newark 4, N. J.
Phone:—HUmboldt 2-2177 TF

"PLASTIC PIPE FOR SALE"

1640 Ft. 3" Schedule 80 High impact rigid pipe never used, 20 Ft. lengths—threaded —couplings included. Total value $4993.38, Price $3500.00 f.o.b. Manistique, Michigan. Address Box 59-292 care Paper Trade Journal. O-26

Wanted

WANTED—One 90"-95" Calender Stack with 8 to 9 rolls. Approximately 20" dia. King Roll. Address Box 59-306 care Paper Trade Journal. N-2

WANTED—(1) Type 18 Cameron Slitter and Rewinder, any condition. Address Box 59-295 care Paper Trade Journal. O-26

PRACTICAL PAPER TECHNOLOGY

by William Bond Wheelwright

This book begins with a survey of "Progress in the Paper Industry" and ends with a list of books recommended for collateral reading. The intermediate chapters are entitled: "How to Judge Paper"; "Physical Aspects of Paper"; "Practical Manual and Visual Tests"; "Essential Facts About Papermaking"; "Coated, Glazed and Specialty Papers"; "Permanence of Paper"; "Paper Difficulties in Converting"; "Paper as a Medium for Printing"; "Letterpress Printing"; "Offset Lithography"; "Intaglio Processes."

Also a Supplement containing a Quiz Test on paper.

LOCKWOOD TRADE JOURNAL CO., Inc.
49 West 45th Street, New York 36, N. Y.

Send postage prepaid, Remittance with order.....copies.
Paper Technology, Price $1.75; Foreign Delivery—25c extra.
All New York City Orders are Subject to a City Sales Tax

Name .....
Street ..... *City and State* .....
....., 19.... *Ordered by* .....

INSTRUMENTS & CONTROLS for . . .

Bleach Plants • Digesters • Evaporators • Lime Kilns • Paper Machines • Chemical Recovery Stock Preparation • Water Treatment

Specialists in application of complete control systems

DISTRICT OFFICES IN Atlanta • Boston • Buffalo Charlotte • Chicago • Cincinnati • Cleveland • Dallas Denver • Detroit • Houston • Kansas City • Los Angeles Memphis • Milwaukee • New Orleans • New York Philadelphia • Pittsburgh • St. Louis • St. Paul • San Francisco • Schenectady • Seattle.

Pulp and paper division
BAILEY METER COMPANY
1056 IVANHOE RD. • CLEVELAND 10, OHIO
In Canada—Bailey Meter Company Limited, Montreal

Another Plant To Serve You

SHIP US IN KALAMAZOO

PACKING PLANTS
CHICAGO, ILL.
WASHINGTON, D. C.
CAMDEN, N. J.
KALAMAZOO, MICH.
LOUISVILLE, KY.

THOMAS PAPER STOCK CO.
1500 N. Hooker St. MO-4-5700 Chicago 22, Ill.

ADVERTISERS

Albany Felt Co. .....52 & 53
Allis, Louis Co. ..... —
Allis Chalmers Mfg. Co. 11
American Bitumuls & Asphalt Co. ..... —
American Bridge Div., U. S. Steel Corp. ..... —
American Cyanamid Co., Paper Chemical Dept. ..... —
Dyes Dept. ..... —
Organic Chem. Div. ..... —
Pigments Dept. ..... —
American Marietta Co. ..... —
American Paper & Pulp Co. Inc. ..... —
American Potash & Chem. Corp. ..... —
American S. F. Products Inc. .. —
American Steel & Wire Co. .... —
Anglo Paper Products Ltd. 65
Annin Company ..... —
Antara Chemicals, Sales Div. Gen. Aniline & Film Corp. —
Apmew, Inc. 66
Appleton Machine Co. ..... —
Appleton Wire Works ..... —
Appleton Wood Products Co. .. —
Armco Drainage & Metal Prod. Co. ..... —
Armco Steel Corp. ..... —
Armstrong Machine Works .. —
Asten-Hill Mfg. Co. ..... —
Atherton James, Ltd. ..... —
Atlantic Coast Line R. R. ..... —
Aurora Pump Div., N. Y. Air Brake Co. ..... —

Babcock & Wilcox Co. ..... —
Bahr Brothers Mfg. Co. ..... —
Bailey Meter Co. 77
Bauer Bros. Co. 37
Becco Chem. Div. Food Machy. Corp. ..... —
Beloit Iron Works Co. ..... —
Binet, Louis et Cie ..... —
Bird Machine Co. 17
Bixby, R. W., Inc. ..... —
Black-Clawson Co. 50
Bolton & Sons 3
Brandon Sales, Inc. ..... —
Broughton, A. E. & Co. 10
Brown Company ..... —
Brown & Root Inc. ..... —
Buckeye Cellulose Corp. ..... —
Buffalo Forge Co. ..... —
Buffalo Pumps, Inc. ..... —
Burgess Pigment Co. ..... —
Butterworth, H. W., & Sons Co. ..... —

Cady, E. J., & Co. ..... —
Caldwell, Wm. & Co. ..... —
Cameron Machine Co. ..... —
Carthage Machine Co. ..... —
Celgar Ltd. ..... —
Central National Corp. ..... —
Central Soya Co. .....Facing 18
Chain Belt Co. ..... —
Ciba Company ..... —
Cities Service Oil Co. ..... —
Clark-Aiken Company ..... —
Classified Advertising 73
Clearing House 73
Cleveland Crane & Engrg. Co. —
Clupak, Inc. ..... —
Coffin Turbo Pump Co. ..... —
Columbia-Geneva Steel Div., U. S. Steel Corp. ..... —
Columbia-Southern Chem. Corp. Sub. of Pittsburgh Plate Glass Co. 23
Combustion Engrg. Co. ..... —
Conoflow Corp. ..... —
Conveyair Sales Ltd. ..... —
Corn Products Sales Co. ..... —
Crane Co. 63
Curtis-Wright Corp. ..... —

Davis, Frank H., Co., Inc. ... —
DeZurik Corporation ..... —
Dewey & Almy Chem. Co. ... 62
Diamond Alkali Co. ..... —
Dierks Paper Co. ..... —
Dilts Machine Works 50
Dodge Mfg. Co. ..... —
Dorr-Oliver ..... —
Dow Chemical Co. ..... —
Dowell, Inc. 2
Draper Bros. Co. ..... —
Dryden Paper Co., Ltd. ..... —
du Pont, E. I., de Nemours & Co., Dyestuffs Dept. ..... —
Electrochemical Dept. ..56 & 57
Industrial & Biochem. Dept. —
Pigments Dept. ..... —
Dusenbery, John, Co. ..... —
Duverre Inc. ..... —

East Texas Pulp & Paper ..... —
Eaton Manufacturing Co. .... —
Ebasco Services, Inc. 9
Egan Frank W., & Co. ..... —
Electric Mchy. Mfg. Co. .... —
Elixman Paper Core Co. ..... —
Elwell-Parker Elec. Co. 70
English China Clays Sales Corp. ..... —
Export Supplement ..... —
Extremultus, Inc. 50

FabriValve Company ..... —
Fairbanks Morse & Co. ..... —
Falk Corporation ..... —
Farrel-Birmingham Co. ..... —
Fibrecast Company ..... —
Fife Manufacturing Co. ..... —
Fisher Governor Co. ..... —
Fitchburg Screen Plate Co. .... —
Foxboro Co. ..... —
Frederick Iron & Steel Co. .. —
Freeport Sulphur Co. 45

Garlock Packing Co. ..... —
Gaspesia Sulphite Co. Ltd. ... 65
Gates Rubber Company ..... —
Geigy Chemicals Corp., Geigy Dyestuffs Div. ..... —
General Dyestuffs Co. ..... —
General Electric Co. ..... —
General Mills, Inc. ..... —
General Tire & Rubber Co. .. —
Gibbs-Brower Co. 73
Gilbert & Nash Co. ..... —
Glidden Company ..... —
Goodyear International Corp.... —
Goodyear Tire and Rubber Co. 2
Gottesman & Co. ..... —
Goulds Pumps ..... —
Grace, W. R., & Co., Dewey & Almy Chem. Div. ..... —
Graver Tank & Mfg. Co. .... —
Grinnell Co., The ..... —
Gurley W. & L. E. ..... —

Hamblet Machine Co. ..... —
Harbison Walker Refractories —
Harshaw Chemical Co. ..... —
Heimbach, Thomas J. ..... —
Hendrick Mfg. Co. ..... —
Hercules Powder Co. ..... —
Hills-McCanna Co. ..... —
Hooker Chemical Corp. ..... —
Houghton & Company ..... —
Huber, J. M. Corp. ..... —
Hudson Sharp Machine Co. .. —
Hungerford & Terry, Inc. ... 72
Hunt, Rodney ..... —
Huyck Felt Company ..... —

Improved Machinery, Inc. ..... —
Ingersoll-Rand Co. ..... —

Jagenberg Werke ..... —
Jenkins Brothers ..... —
Johns-Manville Corp. ..... —
Johnson Corp., The ..... —
Johnson, Alvin H., Co. 66
Jones, E. D., Corp. 47
Jones & Laughlin Steel Corp. —

Kalamazoo Tank & Silo Co. .. —
Kidder Press Co. ..... —
Kinney Engineers Inc. ..... —
Knox Woolen Co. ..... —
Koppers Co., Inc. ..... —

Langston Samuel M., Co. ... 6
La Papeterie ..... —
Lawson Company ..... —
Lawton, C. A., Co. ..... —
Layton-Greenfield Inc. ..... —
Lestoil, Inc. ..... —
Lhomme et Argy ..... —
Link Belt Co. ..... —
Lockport Felt Co. ..... —
Lockwood's Directory ..... —
Lockwood Greene Engineers .. 54
Lodding Engineering Co. 61
Lukon, Inc. ..... —
Lunkenheimer Co. ..... —
Lyddon & Co. ..... —

Magnus Metal Corp. 71
Main, Charles T., Inc. 54
Manchester Machine Co. ..... —
Marathon—A division of American Can ..... —
Maritime Power Corp. 22
Martel, Catala et Cie ..... —
Mead Pulp Sales, Inc. ..... —
Metalsalts Corp. ..... —
Miller Corp., Harry ..... —
Millspaugh Ltd. ..... —
Minneapolis-Honeywell ..... —
Mixing Equipment Co. ..... —
Monsanto Chemical Co. 41
Montague Mch. Co. ..... —
Moore & White Co. 72
Morden Machines Co. ..... —
Mt. Vernon Mills Inc. ..... —
Murray, D. J., Mfg. Co. ..... —

Nalco Chemical Co. 7
Nash Engineering Co. 20
National Gypsum Co. ..... —
National Lead Co., Magnus Metal Div. 11
National Starch & Chem. Corp. —
National Tube Div., U. S. Steel Inc. ..... —
New Jersey Zinc Co. ..... —
Nichols Eng. & Research Corp. .....Back Cover
Nopco Chemical Co. ..... —
Norgren, C. A. Co. ..... —
Northeastern Paper Sales 65
Norton Co. ..... —

Oakite Products Inc. 8
Ohio Injector Co. .....38 & 39
Osborne Paper Mill Equip. Corp. —

Paper Conv. Mch. Co. ..... —
Parsons & Whittemore ..... —
Patton Mfg. Co. ..... —
Penick & Ford ..... —
Penn. Ind. Chem. Corp. ..... —
Pennsalt Chem. Corp. ..... —
Perkins, B. F. & Sons, Inc. —
Perkins Goodwin Co. ..... —
Permutit Co., Div. of Pfaudler Permutit Inc. ..... —
Pioneer Paper Stock Co. ..... —
Potdevin Machine Co. ..... —
Powell Valves 67
Price & Pierce, Ltd. ..... —
Provident Life & Acc. Insurance ..... —
Pusey & Jones Corp. ..... —

Railway Supply & Mfg. Co. .. —
Raymond, Chas. P., Service .. —
Record Fdy. & Mch. Co. ..... —
Red Ray Mfg. Co. ..... —
Rhoads, J. E., Sons Co. ..... —
Rice Barton Corp. 14
Riedel, Gus & Son ..... —
Riegel Paper Corp. ..... —
Robbins Instrument Co. ..... —
Rohm & Haas Co. ..... —
Ronningen-Petter Co. ..... —
Roosevelt Paper Co. Front Cover
Ross, J. J., Co. 75
Ross, I. O., Engrg. Co. ..48 & 49
Ross Midwest Fulton Corp. .... —
Ross Paper Machinery Co. 77
Ruderman Machinery Exchange 74
Rust Engineering Co. 54
Ryerson, Jos. T. & Son ..... —

Sandoz, Inc. 21
Sandy Hill Iron & Brass Works 72
Scapa Dryers Inc. ..... —
Scott Testers ..... —
Seaboard Air Line R. R. Co. .. —
Shartle Div., Black-Clawson Co. 50
Shawinigan Resins Corp. 55
Sheffield Corp. ..... —
Shell Chemical Corp. ..... —
Shuler & Benninghofen ..... —
Shy, C. D. & Company 54
Signode Steel Strapping Co. Cover 3
Sinclair Company ..... —
Sirrine, J. E., Co. ..... —
SKF Industries ..... —
Smidth, F. L., & Co. ..... —
Socony Mobil Oil Co. ..... —
Sonoco Products Co. ..... —
Southworth Machine Co. ..... —
Spraying Systems Co. ..... —
Sprout Waldron & Co. ..... —
Stadler Hurter & Co. ..... —
Staley Mfg. Company 59
Stanley Steel Company ..... —
Stebbins Engrg. Co. ..... —
Stein, Hall & Co. ..... —
Stephens-Adamson Mfg. Co. .... —
Stone & Webster Eng. Corp. .. 12
Stowe-Woodward, Inc. ..... —
St. Regis Paper Co. 73
Sunday, George M., Assoc. ..

Taylor Instrument Co.'s ..... —
Taylor Stiles & Co. 70
Taylor-Wharton Company .... —
Tennessee Coal & Iron Co. ..... —
Tennessee Corp. 51
Testing Machines ..... —
Texaco, Inc. 4
Texas Gulf Sulphur ..... —
Thiele Kaolin Co. ..... —
Thomas Paper Stock Co. 72
Titanium Pigment Corp. ..... —
Towmotor Corp. ..... —
Turner Halsey Co. ..... —

United Engrg. & Fdy. Co. ..... —
U. S. Industrial Chem. Co. Div. of National Distillers & Chem. Corp. ..... —
U. S. Rubber Company ..... —
U. S. Steel Corp. ..... —
United States Steel Export .... —
United States Steel Supply Co. .. —

Valley Iron Works ..... —
Vanderbilt R. T., Co. ..... —
Virginia Smelting Co. ..... —
Voith, J. M., G. m. b. h. ..... —

Waldron, John Corp. ..... —
Waldorf Industrial Controls .... —
Walworth Co. .....Facing 19
Weber, H. G., Company .... —
West End Chemical Div., Stauffer Chem. Co. ..... —
Westvaco Div., Food Mchy. & Chem. Corp. 19
West Virginia Pulp & Paper Co. 22
Weyerhaeuser Timber Co. .... —
Wheeler Roll Co. ..... —
Williams Apparatus Co. ..... —
Williams-Gray Co. ..... —
Wisconsin Wire Works 71
Witco Chemical Co. ..... —
Woodpulp, Inc. ..... —
Wood's, T. B., Sons Inc. .... —
Wyandotte Chem. Corp. ..42 & 43
Wyatt Metal & Boiler Works . —

Yarnall-Waring Co. ..... —

While we strive for accuracy in preparing the above index which is purely a service to our readers, we cannot be responsible for errors.

PAPER TRADE JOURNAL

BUSINESS STAFF

Arthur E. Gordon, Business Mgr.

Francis J. Gordon — Alrick Man

New York 36, N. Y. 49 W. 45th St. Plaza 7-2370
Cable: "Lockmin"

CHICAGO 3, ILL.: H. K. Vinton
Room 1020, 79 W. Monroe St. CEntral 6-2784

PITTSBURGH 11, PA.: H. L. Poulton
610 Pennridge Road. HEmlock 1-1571

MIAMI 38, FLA.: Hal Moore
279 N. E. 79th Street. PLaza 8-5516

Rep. by McDonald-Thompson in:

LOS ANGELES 5, CAL.: R. Teeter
3727 W. Sixth St., DUnkirk 7-5391

SAN FRANCISCO, CAL.: Cal Wood
625 Market St. YUkon 1-2245

DENVER 3, COLO.: Bob Heidersbach
620 Sherman Street. KEystone 4-4669

PORTLAND 4, ORE.: Fred Goetz
404 Times Bldg. CA 2-5146

DALLAS 19, TEXAS: Parker Harris
2727 Oak Lawn Ave., LAkeside 1-1266

HOUSTON 6, TEXAS: F. Vickrey
Room 214, 3217 Montrose Blvd. JAckson 9-6711

SEATTLE 4, WASH.: H. Abney
1008 Western Ave. MA 3-3766

Frederick B. Grosse, Production Mgr.

New York 36, N. Y. 49 W. 45th St. Plaza 7-2370
Cable: "Lockmin"

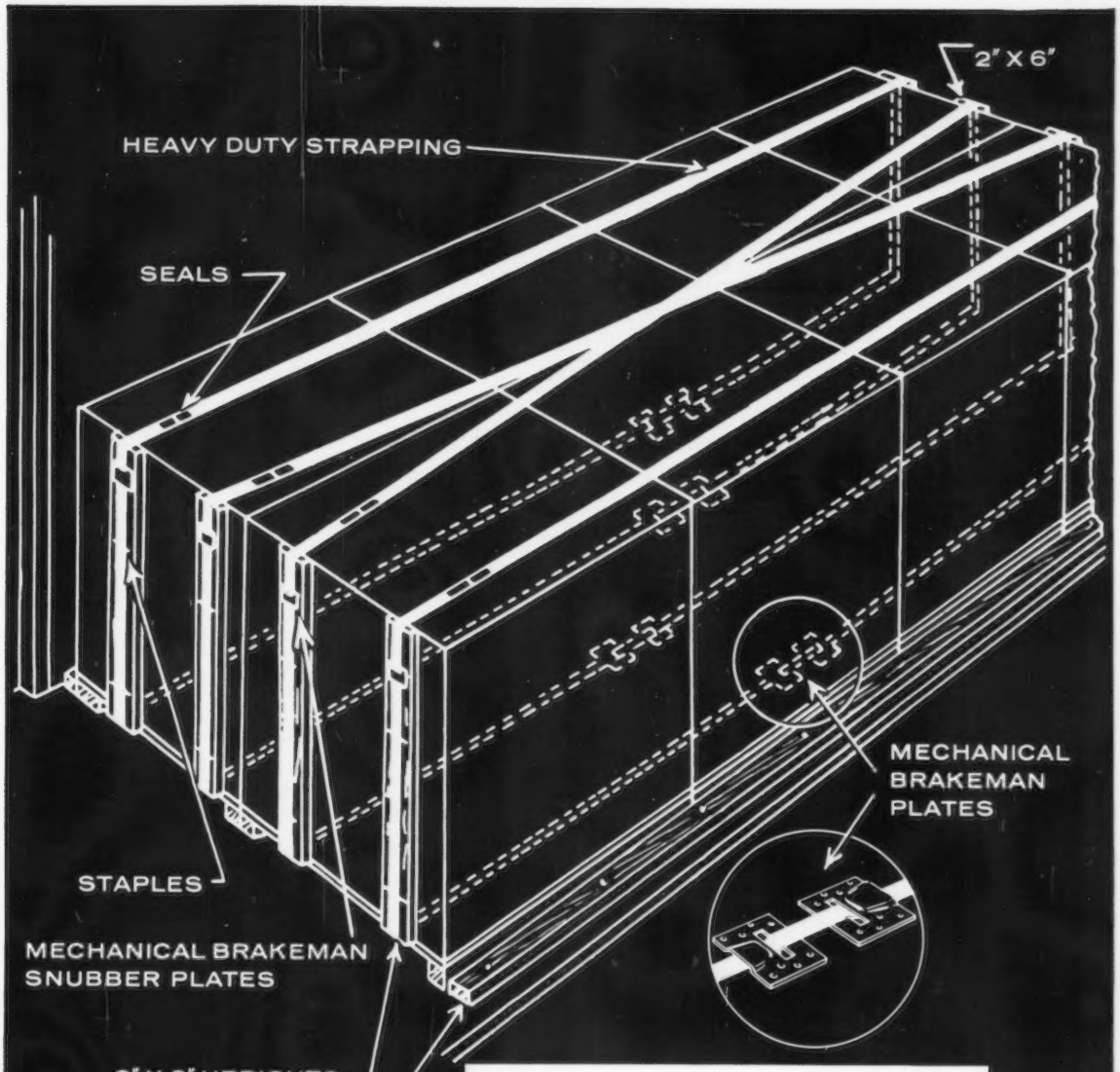
Foreign Representatives

EUROPE except U.K. & Germany
John Ashcraft
67 Avenue des Champs Elysees, Paris, 8.

GERMANY
Herbert Morgenbesser
Kohlgarten, 3, Hamburg-FU. Phone 59-82-83

UNITED KINGDOM
John Eckford-Prossor, Agent,
Stafford House, Norfolk St., Strand, London, W C 2

HUGHES PRINTING CO.
EAST STROUDSBURG, PA.



This is one of many Signode carload bracing methods now in general use. It depends for its success, first, upon Mechanical Brakeman plates, originally developed and patented by Signode, and secondly, upon many details such as placement of straps and plates about which your Signode representative can advise you. For expert assistance in damage free shipment of paper, consult a Signode paper specialist.

SIGNODE

First in steel strapping

SIGNODE STEEL STRAPPING CO.

2677 N. Western Avenue, Chicago 47, Illinois

Offices Coast to Coast. Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

NICHOLS FREEMAN

VORJECT®

Cleaner

Engineered with *your* mill in mind

"ENGINEERING IS OUR MIDDLE NAME"

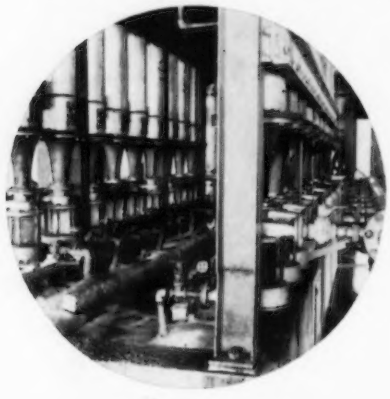
Every Nichols Freeman Vorject, Vorvac and Vortrap System is individually engineered to meet the requirements of the specific mill and to provide optimum operating performance. Twenty-five years of Nichols' experience in centrifugal stock cleaning and conditioning is your guarantee of satisfaction.

Submit your centrifugal stock cleaning problems to Nichols' engineers.

NICHOLS

Engineering & Research Corporation

70 Pine St., New York 5, N. Y.

405 Montgomery St.
San Francisco 4, Calif.

1477 Sherbrooke St. W.
Montreal 25, Canada